JOURNAL OF HIGHER EDUCATION

Vol. 1 No. 1 Monsoon 1975



JHE

Editorial Board

Professor Satish Chandra
Vice-Chairman, UGC
Professor Rais Ahmed
Professor S. Manzoor Alam
Professor J.B. Chitambar
Professor M.S. Gore
Professor Tapas Mazumdar
Professor M.V. Mathur
Professor R.C. Mehrotra
Dr. N.K. Panikkar
Professor R. Rath
Professor M. Santappa
Professor H.L. Sharma
Professor R.S. Sharma
Professor S. Shukla
Honorary Editor

KP 3300

© University Grants Commission
New Delhi

Printed and Published by R.K. Chhabra, Secretary, University Grants Commission, New Delhi-1. Technical Production: V. Appa Rao. Printers: Indraprastha Press (CBT), Nehru House, New Delhi-1

CUL - HO 5249 - 1 - KP3300

JOURNAL OF HIGHER EDUCATION

Vol. 1 No. 1 Monsoon 1975



UNIVERSITY GRANTS COMMISSION
NEW DELHI

The *Journal of Higher Education* is published by the University Grants Commission to promote scholarly study of, as well as discussion of contemporary problems and policies in higher education.

Views expressed in all contributions are those of the authors. The Commission or the *Journal* are not committed to them.

Contributions in duplicate type script and books for review (2 copies) may be addressed to the Honorary Editor.

The *Journal* is issued thrice a year: Monsoon, Autumn and Spring.

Subscribers to the *Journal* will also receive a copy of the *Bulletin of Higher Education* published by the Commission thrice a year. The *Bulletin* carries official information from the University Grants Commission.

Rates of subscription for the *Journal* are as follows: Annual Rs. 20 (India), £3 or $8 (Foreign); Single copy Rs. 8 (India), £ 1 or $ 3 (Foreign.)

Enquiries regarding subscriptions may be addressed to Publication Officer, University Grants Commission, 35, Ferozeshah Road, New Delhi-110001.

CONTENTS

Obituary: Dr. S. Radhakrishnan			
Editorial		...	1
Higher Education in India—Plans and Prospects	*Satish Chandra*	...	5
Devaluation of Education: A Quantitative Analysis	*P.R. Panchamukhi*	...	15
New Educational Technology and the Teaching of Chemistry	*R.C. Mehrotra*	...	31
Relevance, Renovation and Processes of Change	*D.P. Pattanayak*	...	43
Undergraduate Curriculum and Teaching: A Symposium		...	49
Towards a Meaningful First Degree	*V.V. John*	...	51
Undergraduate Curricula in Social Sciences	*Arun Bose*	...	61
The Teaching of Sociology	*Radhika Ramasubban*	...	77
Curriculum—A Proposal	*Buddhadeva Bhattacharya and Janes Patranabis*	...	87
The Case for Autonomy	*R.V. Kamat*	...	91
Far From the Main Campus	*R.K. Yadav*	...	99
Innovations in Undergraduate Education	*J.N. Kapur*	...	103
Fundamental Questions	*Surindar Suri*	...	111
Notes from Research			
Financial Crisis of the University of Calcutta	*K. Mukherji*	...	121

Perceptions of College Environment and Professional Socialization of Medical Students — *T. Venkateswara Rao* ... 124
Self Concept and Achievement — *Vasantha Ramokumar* .. 124

Communications

Recommendations of the UGC Panel on Teacher Education — *R.N. Mehrotra* ... 127
Collaborative Classroom Assessment — *R. Rath* ... 130

Documentation

Curriculum Development in the Humanities and Social Sciences: Economics ... 133

Book Reviews

The Politics of Manpower Planning —Graduate Unemployment and the Planning of Higher Education in India by Trilok Nath Dhar — *K.N. Kabra* ... 139
The Higher Learning in India edited by Philip G. Altbach and Amrik Singh — *Sudhir Chandra* ... 141

Citizen in the Making by Surendra K. Gupta — *Karuna Ahmad* ... 143

Books and Journals Received ...

Our Contributors ...

Cover Design and Layout: A. Ramachandran

Sarvepalli Radhakrishnan
5 September 1888—17 April 1975

Dr. Radhakrishnan—distinguished philosopher, educator and statesman—headed the University Education Commission 1948-49 and was Vice-President and later President of India.

He represented India and Indian Philosophy with distinction, the world over. His contributions to international educational and cultural co-operation through UNESCO and through teaching and lecturing in many countries are as great as his contributions to the building up of academic strength in the Universities of Calcutta, Mysore, Andhra, Varanasi, among others, in our own country. As a statesman, he played a significant part in presenting India's image abroad and in developing our own polity at home.

We pay our respectful tribute to the memory of this distinguished intellectual and citizen of the world.

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

EDITORIAL

Man lives today in an increasingly self-conscious culture, false and illusory though that self-consciousness might often be. The higher learning, even in an underdeveloped country is, therefore, introspective and full of self-doubt, even as, on account of the same self-awareness it plans its future. For both these reasons, systematic self-examination has increasingly been demanded by academia. Attempts like this journal are even made.

This in itself could be a false phenomenon. What justification does Indian higher education have to allocate to itself chairs for its study or publish journals, particularly in a milieu where two-thirds of the population is outside the web of literate communication, where the rate of *growth* of literacy has shown a declining trend and where, therefore, unless drastic measures, socio-economic as well as pedagogic-cultural, are taken, the prospect is of permanent illiteracy of one half the people, a permanent dual society and dual culture.

But this illustrates precisely the task, the challenge, the dilemma of higher education. The yoking of learning and culture to the immediate pressing needs of universal culture, universal health—and, indeed, universal physical survival to a full span of human existence —is imposed as a task on higher education, indeed, on all education, or for that matter, on all human effort. This is the challenge of *relevance.*

Relevance must be contemporary and the Indian intelligentsia—almost all of which has had higher education — lives in two contemporary worlds, the one just described, the other, the world of rapidly changing modern knowledge and technology. This latter poses the challenge of, to use another well-worn *cliché*, *excellence.*

The higher learning must achieve *relevant excellence* and also, to coin an awkward new usage, *excellent relevance.*

But even this view of the situation is simplistic, if not actually *naive.* People with ancient cultures—and if this sound too archaic and revivalist to some ears—with a history and a long remembered past preserved through literate and aesthetic, institutional and behavioural products of that past, are endowed with, paradoxically, both resources to cope with the challenge of relevance-excellence and, if as in the Indian case, history had got distorted or arrested through unhappy encounters with imperialism, also problems and unhelpful legacies to cope with. The self-awareness of such an intelligentsia cannot helpfully be either esoterically contemplationist or brashly technology minded modernist. Nor is it justified now in taking to a telic or teleological/deterministic view of the future, which in fact could increasingly be an open one—in technology, in social structure and in the nature of the human person. Its excellence must cope with both past and current history and with an open future. So must its relevance.

Relevance, indeed, is a most difficult mistress. The old elite—bureaucratic, professional, high caste, urban, rich and so on—and the burgeoning new middle classes developing out of the medium level privileged in countryside and town have all their own definitions of relevance—mostly at variance with those, if they could articulate them effectively, of the rural and urban poor, the "ex-untouchables", of all but the exceptional housewife or woman and of other groups and classes in Indian society who are not "in". Relevance, let us recognise, has been defined so far by those who own the resources of property, power, status and intellect. To define relevance socially more meaningfully and to instal it at the centre of decision making as well as on the periphery of everyday action—loaded dichotomy ! —is an exercise of substance. To marry what appear to be its significant components viz., (a) *national*, dominating divergences across class, tribe, community and economic or power position and (b) *social* i.e. that which seeks to bring back the underprivileged and the deprived into, if not at the centre of, the common world of humanity—into market, communication, political participation etcetera—is the challenge of contemporary Indian life. It is also the challenge faced by India's higher education.

There are other complexities. Pre-modern men lived simple, at least convivial lives. Togetherness, nature, earth all reinforced a sense of being. The learned few were not too troubled, in any case not with the worries of the "common"man. Nor did theirs trouble the common man. But modernity has based itself on knowledge, essentially rational

cognitive knowledge—and also (Weber's) 'rational' bureaucratic organisation and social order. The simple techniques of pre-modern periods grew into complex technologies increasingly based on science, itself initially born out of experimentalist digressions of the contemplative mind. From this arose the new modern university. But more importantly, the human person, grown a little more lonely even if more individualistic and "free", was faced with a completely new range of effort in keeping itself whole while coping with the new science, technology and organisation. Higher education which had so far only remained a transmission of the higher learning—humanistic, scientific or technological—has, therefore, in the 20th century been faced with challenges to which Freud among others drew attention in so far as ordinary human lives of ordinary men were concerned and which education generally, and higher education particularly, have evaded. Even ignoring the full thrust of this aspect of the human situation, against the background of more severe macrophenomena of change, mobility, nation building, revolution, the education of the whole man must, little as it is conceded in practice or policy making, today include the affective, the emotional, the skill-oriented and the aesthetic. More particularly, as the "common" man of the past is now with us in the higher learning. But also in fact even otherwise." For, must the gifted always fend for themselves? And must the not-so-gifted be dealt with without reference to the non-cognitive phases of their personalities ?

There are, of course, no unique and time honoured answers to this new question—new because of the large scale and non-elite character of the population. The arts- and the life-adjustment orientations of American higher education appeared to attempt coping with it with only marginal success—as protest and counter culture of the 60's showed. The Chinese cultural revolution faced this phenomenon of the emergence of the masses all right but evaded the questions in higher education by temporarily side-tracking higher education itself. The proponents of the classical university would reassert, with however democratic a tone or emphasis, its elite, intellectually as well as socially selective character and emphasise its intellectual learning functions. And yet mass student unrest, the discontent of the educated man with his state and with his world, persist. And leaving aside important and obvious problems such as unemployment calling for obvious though hard solutions, the equally obvious questions of *anomie* and alienation have to be faced both in society and in higher education.

Higher education itself has, in this country an uncertain place in

the realm even of higher learning—a proper cognitive domain—and suffers from a deep feeling of displacement by the fact that laboratories, institutes, academies, funding councils occupy some of the strategic positions even within the domain of the knowledge industry, in the realm of creating the new, applying the existing and even in disseminating either and training the new intellectual. Whatever the degree of their success, the new type of higher education institutions also present new models and produce turbulence or trepidation among the sensitive elements of the vast, sprawling universe of colleges by the thousand, universities by the hundred. There are the agricultural universities with their pronounced and professed commitment to seeking out problems in the field, focussing research and training thereon, linking with service and extension. There are, too, the well-endowed and equipped medical institutes, IIT's as also the proliferating and prosperous institutes of inservice training for industry, management and government—residential, small in numbers, large in space, select in every respect. They inspire envy and discontent in the vast periphery of the higher education system even if the professed objective of strengthening industry or health in this country with contemporary knowledge and relevant practices are some distance from fulfilment. This, while the higher education of this country serves to produce semi-processed manpower for the industrial systems of the West through its upper reaches and to meet the employment, status and mobility aspirations of many through the rest. Finally, the whole of this system, English based in the main, remains insulated from its vast constituency on account of the language barrier.

It is here that four million students and teachers labour. And it is here that they must find meaning and significance in their endeavour. The problems that arise are myriad. The perspectives from which they are viewed are many. Endeavour, solutions, structures and processes must arise from the contest of contending perspectives.

S. S

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Higher Education in India—Plans and Prospects

SATISH CHANDRA

A great deal has been said about the lack of relevance of education in India, in relation to national needs and the need for its restructuring. Before setting out the UGC policy in this regard, we may take a brief look at the historical perspective as well as the socio-economic milieu in which higher education has developed during the last 25 years.

Despite many short-comings, the system of education in India bequeathed by the British has been modified in important respects during the period. Higher education is no longer the monopoly of the landed classes, the bureaucracy and a small segment representing the professional classes as it was under the British. The rapid expansion of higher education since 1947 has drawn within its fold broad sections of the middle classes, both men and women, the lower middle classes in the towns, and a small section of the socially underprivileged sections. The key issue in the realm of higher education is how to extend higher education to the large section of the under-privileged—the working masses, scheduled castes and tribes, rural masses etc., without lowering the standards further or over-loading the system. The basic issue, thus, is of changing the composition of the student body in universities and colleges making it more representative of our society.

Another direction in which change has taken place is that the research programmes of the universities have been considerably strengthened. Our universities are no longer, as they were under British rule, transmission belts for dissemination of information and transmission of ideas of British and European scholars often for ulterior motives. (For example, the idea was assiduously cultivated

that people living in warm climates were inherently inferior to people from cold climates. Or, that the Indians, being of a philosophical bent of mind, were unsuited for certain kinds of effort). Since then, many research institutions of high quality have been established in India and we have one of the largest bodies of scientifically trained manpower in the world, actively engaged in research. Recent achievements of India in the field of science and technology are evidence of the calibre of the training and other facilities developed in the country. Of course, there are many shortcomings in the work as well as in the training programmes, but our achievements during the last quarter of century need not be ignored or denigrated. We have been able to develop an infra-structure on the basis of which it is possible to make a sustained advance, qualitatively as well as in relation to national needs. Consolidation and quality improvement are thus two of the watch-words of the Commission, and the universities and colleges have been asked to bear these in mind while preparing their plans of development for the Fifth Plan period.

Regulating Growth

A major problem which the country has been facing and which government and the Commission had to tackle was the unplanned growth of higher education. This has led to wastage of national resources and furtherance of educated unemployment on a large scale. During the period 1962-63 to 1971-72, enrolment in universities and colleges rose at the average annual rate of about 12%. It was felt that the economy could not cope with this rate of expansion, at least as far as provision of classroom seats was concerned. Expansion of non-formal education and, in this context, discouraging establishment of new universities and colleges are the twin policies which have been followed. As a result, the rate of the establishment of new colleges has already slowed down. From an average growth rate of 200 new colleges per year during the period 1969-70 to 1972-73, it has come down to 125 new colleges in 1973-74, while only 83 such colleges have been started in 1974-75. The number of new colleges set up in 1975-76 is expected to be even lower, following the decision of a number of State Governments not to permit a new college to be established without their prior approval.

Admission of students to higher education have also shown a sharp declining trend (Table 1). Socio-economic developments are undoubtedly an important factor in this declining trend. But the provision of facilities for non-formal education, as advocated by the

Commission, has also had a definite impact as is evident from Table 2.

Table 1

GROWTH RATE IN UNIVERSITY ENROLMENT

Year	*Enrolment excluding PUC/Inter/PP*	*Actual increase over the preceding year*	*% increase over the preceding year*
1969–70	1,792,700	226,597	(14.5)
1970–71	1,953,640	160,940	(9.0)
1971–72	2,065,041	111,401	(5.7)
*1972–73	2,168,107	103,066	(5.0)
*1973-74	2,233,547	65,440	(3.0)

* Revised figures (as now compiled in the Statistics Division, UGC).

Table 2

NUMBER ENROLLED IN CORRESPONDENCE COURSES AND AS 'PRIVATE CANDIDATES' : (DEGREE LEVEL)

Year	*Private*	*Correspondence*	*Total*	*Actual increase over the preceding year*	*% increase over the preceding year*
1971–72	1,04,000	31,429	1,35,429		
1972–73	1,24,000	29,047	1,53,047	17,618	13.0
1973–74	1,40,000	36,276	1,76,276	23,229	15.2

(Numbers shown above under 'Private' column are the estimated minimum enrolled for the first degree only).

As will be seen, private and correspondence students form roughly 1/3rd of the new students enrolled during 1973-74. The number of students opting for non-formal education is increasing both on a percentage and on an absolute basis. A number of State Governments have recently permitted students to appear privately for degree examinations. On the basis of guidelines worked out by the UGC, correspondence courses will be extended during the Fifth Plan to universities. It is proposed to provide facilities for correspondence courses in one university per state. So far correspondence courses have not found favour with universities located in the eastern and western regions of the country. These will be covered during the Fifth Plan.

It has been proposed that roughly 30% of the new entrants should be enrolled in the non-formal stream. Nevertheless, an attempt would be made to maintain a growth rate of around 4% as far as full-time enrolment in the universities and colleges is concerned. This is within the financial means of the country and is important from the view point of maintaining proper standards, social justice and national needs and aspirations.

Planning and Developing Colleges

Since 89% of the students study in colleges, raising standards in colleges is a first requisite. The Commission has taken a major step in this direction by bringing the pay-scales of lecturers in universities and colleges on par. It has also instituted a programme of creation of Readerships in colleges which come up to a minimum norm. However, it should be admitted that there are many other difficulties in raising standards in colleges. Colleges are widely scattered and the bulk of them are managed privately. As at present there are about 3,200 Arts, Science and Commerce colleges in the country but out of these about 50% have an enrolment of less than 400, only 20% have an enrolment over 1,000 and only 3% over 2,000. A college with an enrolment below 400 may be considered non-viable. A large number of these non-viable colleges have poor academic standards and poor staff. Also the majority of them are located in rural areas. Bearing in mind the special problems facing these rural-based non-viable colleges, the Commission has worked out a programme of re-orienting colleges towards rural problems. The courses which have been suggested have a field orientation as well as application aspects designed to link theory more closely to practice or to the concrete situations obtaining in the region in which the college is situated. These courses are, however, not meant exclusively for the colleges located in the rural areas. They could as well be adopted by the stronger colleges located in the towns and it is hoped that this would actually be done. Also rural colleges could continue to provide for general instruction as well as to cater to courses with a bias towards rural problems. Thus they would not be taken out of the general stream.

The Commission has strongly advocated treating the district as the unit for educational planning. There are many districts which have 20 colleges or more; and, on the other, many which have one or none. State Governments must adopt a definite locations policy for new colleges. The State Government should itself set up colleges in backward areas. Where there are a number of colleges in the same city

or in close proximity, the colleges should be encouraged to adopt cooperative teaching. Common facilities could be provided in academic centres. Since most of the colleges are under private management, and have often been set up on the basis of caste, politics and other non-academic considerations, such cooperation is difficult, but by no means impossible. The Commission has been trying to encourage it at the postgraduate level in the districts. A special programme has been put forward for strengthening postgraduate colleges. The COSIP and COHSIP[1] are also designed to introduce a certain measure of flexibility and field studies in colleges at the undergraduate level. In addition, a new programme for setting up academic centres in the four metropolitan towns—Delhi, Calcutta, Bombay, Madras has been put forward, and the universities in these towns have been invited to put forward definite proposals. Other towns with large numbers of colleges, will be brought into this scheme in the light of experience gained in the metropolitan towns.

The Commission has laid a great deal of emphasis on the concept of "autonomous colleges" which had been supported earlier by the Education Commission. There has been some apprehension that autonomous colleges would lead to "elitism", promote "classes" among colleges and further that the colleges not given the status of an autonomous college would be deprived of their due share of central funds. However, these apprehensions are unfounded. We already have 'elite' colleges, and there is a definite classification of the academic status of colleges in the minds of people in various regions. In the past, only 1400 colleges actually received assistance from the UGC. The programme of assisting rural colleges would enable many more colleges to receive assistance from the UGC. The Commission has also clearly indicated that (i) no *new* colleges with funds from UGC would be set up as autonomous colleges, and that (ii) existing colleges, given an autonomous status, would receive only marginal funds from the Commission. What then are the benefits of autonomous colleges? Autonomous colleges form part of the overall strategy of making the educational system more flexible and relevant to national needs. These colleges could introduce courses more relevant to regional needs, and introduce various types of field study programmes which they could evaluate themselves. Secondly, it is a part of the Commission's effort to develop good educational facilities on a district level. Autonomous colleges would have to be chosen on the

1. College Science Improvement and College Humanities and Social Science Improvement Programmes. Selected colleges are eligible for a grant of Rs. three lakhs for three years.

basis of their academic performance and ability to assume added responsibilities, as also to provide quality education at the district level. It is, thus, designed to break the monopoly of good education at present available only in 'elite' institutions located in big towns, or in especially chosen resorts. The idea of autonomous colleges has been slow to develop because of reluctance of universities to lose their control over the better colleges; fear on the part of colleges and Managing committees, and the inability of the larger public to understand the true dynamics and significance of autonomous colleges. However, the ground work has been laid, and many universities and colleges have now overcome their initial reluctance and fear. Provision for autonomous colleges have been made in the Acts of a number of State Universities and a fair number of such colleges would be recognised during the current session.

Relevance and Reform

A basic question which our country is facing along with many countries in the world, is the question of relevance of higher education to national needs. Recent studies have shown that while higher education has low social returns, it has high benefits to the individual. This dichotomy only underlines the point that the existing courses do not bear much relation to national needs and requirements. The Commission has undertaken the task of restructuring of courses with the help of subject panels on which leading academics are represented. The new courses, it is hoped, would reflect recent development in various disciplines and also lay more emphasis on field studies, linking theory with practice. Also, emphasis would be placed on concepts and problems rather than on dissemination of information. Side by side with this, courses and facilities for imparting of intermediate level skills to students are to be developed in order to increase their employability. The Commission does *not* favour vocationalization of higher education. It is of the view that higher education implies training of a critical faculty, and grasp of theoretical concepts at a high level. But the students must be taught how to apply these concepts to specific situations and problems. This could be built within the courses by structuring one of the courses/papers in manner as to bring out the application aspect. Alternatively, it might be more useful to have diploma courses which could be rapidly altered according to employment opportunities. With the help of the UGC, the Universities of Gujarat, Bangalore, Mysore, Jammu, Marathwada etc., have already instituted a number of such courses. Altogether, this represents a new thrust with great potential.

Reform of the present examination system is closely linked to the problem of restructuring courses. The present system apart from anything else, emphasises rigidity and conformity, not innovation. The basic philosophy accepted by the Commission, and set out in a number of documents, is that one who teaches should examine. Thus, the teacher has to be the fulcrum of a regenerated educational system. Recent inputs by way of enhanced salaries is closely linked to this philosophy. However, bearing in mind the vastly different conditions and standards in diffrent universities, the Commission has advocated a flexible approach. Where continuous internal assessment is not feasible, the question bank has been advocated. The grading system is to replace the present marking system. Many universities have already moved in the direction of internal assessment and question banks. Grading system will be introduced in many universities this year.

An ambitious programme of Faculty Improvement has been put forward to prepare teachers for the new courses and the new examination system. Summer institutes, workshops etc., as well as correspondence courses and M. Phil. programmes will all be linked to this purpose.

There has been a good deal of discussion in the country regarding the quality of research carried out within the university system. While there is one section of opinion which thinks that university research has been largely repetitive and that the universities are not equipped for carrying out any project-oriented research within a given time frame, others have argued with facts and figures that even with the meagre financial resources and limited equipment, 75% of research in the country has come from the universities. Also, that the unit cost of research in the university is much lower than research institutions outside the university. Revision of pay scales, and emphasising re-research experience as a pre-requisite for appointment in the universities and colleges is the biggest step taken by the Commission for attracting persons with better research orientation into teaching professions. The Commission is of the opinion that research in the universities must be strengthened further by providing more facilities and funds, a part of which should be contributed by research bodies of the Government such as Council of Scientific and Industrial Research, Indian Space Research Organisation, Electronics Commission, Committee on Environmental Studies etc., and some by user bodies such as the Oil and Natural Gas Commission, National Coal Board, and other public and private bodies. In order to plan and coordinate research within the universities and establish a more meaningful link

between scientists in the university and outside the university system, the Commission has set up a Science Research Council. It has also set up research panels to identify research schemes and programmes put forward by individual scientists or groups of scientists. Junior and Senior Research Fellowships being provided by the Commission have been augmented and the stipend raised. The fellowship programme has also been reviewed so as to attract a better calibre of students towards research. Programmes of National Associateship, National Fellowships for senior personnel are directed towards the same end. College teachers are to be encouraged to undertake research by providing them study leave for short and long terms.

It would not be out of place here to add that the Commission is aware that while there are a number of agencies in the country supporting research in the field of natural sciences, adequate facilities for research in the field of social sciences and humanities are not available. The Commission, has therefore, decided to devote a fair proportion of the funds earmarked for research for supporting research in the field of social sciences and humanities. In order that research should have some broad direction, subject panels have tried to lay down priorities which would be revised from time to time, bearing requirements and concrete conditions in mind.

Student Amenities

In the end, I might add a few words regarding student amenities. The Commission has tried to consolidate the various programmes of student amenities by highlighting those programmes which are of an urgent nature. Thus it has placed considerable emphasis on book banks, canteen and recreational facilities, study centres and provision of hostels. It is felt that if postgraduate facilities are to be provided to students on a district basis, adequate hostel facilities would have to be established in selected institutions. The Commission has laid down that wherever new hostels are set up with the financial aid given by the Commission, 20% of the seats would be reserved for scheduled castes and scheduled tribes.

The Commission attaches great importance to youth programmes, particularly to NSS, which should enable students to use their skills for the service of the community and also to have a better understanding of the social, economic, cultural and other problems facing the people. The Commission is of the opinion that social service and all other credits gained by a student during the university or college career should be mentioned on the grade card so that all aspects of

a student's attainments, not only his academic attainments, are properly projected.

Can the Commission implement its programme of educational regeneration, given the social, economic and political constraints and meagre financial resources made available to it for the Fifth Plan? Although the socio-political constraints are important, the Commission is strongly of the opinion that the programme outlined above can be implemented even within these constraints. But this would mean setting up a planning machinery both at the State and the district level, with adequate co-ordination at the central level. The constraint of resources is likely to have a more serious impact. Adequate resources are needed for a good educational system. The proportion of outlay on education in the plans has been declining. In the draft Fifth Plan, the bulk of the money for education had to be raised by the states where there is likely to be a considerable short-fall.

In the final resort, a proper climate of opinion and dedication on the part of teachers would be important in implementation. Self-denigration, defeatism and cynicism have been the bane of many reforms, howsoever well conceived. The organised teachers' movement, students, and the broader community will have to play a meaningful role in the process of educational change and renovation. The press, the radio and other avenues of mass communications can also assist in this development.

INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH JOURNALS

ICSSR Research Abstracts Quarterly: Publishes detailed abstracts of research work in the field of social sciences. The abstracts set out the objectives, the methodology and the major findings pertaining to projects either sponsored by the ICSSR or other projects in the field of social sciences.

Trade enquiries may please be addressed to Orient Longman Pvt. Ltd., 3/5, Asaf Ali Road, New Delhi-110001.

Subscription: Single copy Rs. 3 or 30 ps. or 75 cents. Annual Rs. 10 or $2.50.

Indian Dissertation Abstracts: This is a quarterly journal which publishes synopses of doctoral dissertations in the field of social sciences for which Ph.D. degrees have been awarded by Indian universities. The service has been extended to the fields of history and philosophy.

Universities are requested to send to the ICSSR all information pertaining to the award of Ph.D. degrees in the field of social sciences, history and philosophy and recipients of the degrees are requested to send directly the synopses of dissertations running to not more than 1,000 words.

Trade enquiries may please be addressed to Popular Prakashan Pvt. Ltd., 35C, Tardeo Road, Bombay-400 034.

Subscription: Single copy Rs. 3.00 or 50 cents. Annual Rs. 15 or $ 3.

ICSSR Journal of Abstracts and Reviews: Sociology, Social Anthropology, Criminology and Social Work: publishes abstracts of recent research work in the fields indicated in the title and reviews of books that fall in these fields.

Trade enquiries may please be addressed to National Publishing House, 23, Darya Ganj, Delhi-110006.

Subscription: Single copy Rs. 7 or £ 0.50 or $ 1.50. Annual: Individuals Rs. 10 or £ 0.75 or $ 2. Institutions Rs. 12 or £ 0.90 or $ 2.50.

Indian Psychological Abstracts: Publishes short annotations on all recent research work in the broad field of psychology. This is a bi-monthly and is published by Samasti Publications, Baroda.

Trade enquiries may please be addressed to Dr. M.B. Buch, Director, Centre for Advanced Study Education M.S. University, Baroda.

Subscription: Annual Rs. 12 or $ 6.

Journal of Abstracts and Reviews in Geography: The ICSSR is bringing out a half-yearly journal comprising abstracts of research work and reviews of books in the fields of human and political geography. The first number is in press and is scheduled to be published by June, 1975.

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Devaluation of Education: A Quantitative Analysis

P. R. PANCHAMUKHI

A comparative study of the international statistics about educational development reveals that in a majority of the countries education has been growing much faster than the economy of the country itself. The budget of the government on education in most of the countries is found to be very high, next only to the budget on national defence. The enrolments are rising; literacy rates are higher; transfer rates of pupils from the previous to the next stage have been on a continuous increase; the number of institutions of education are rising and the amount of facilities per student has a rising trend. In the field of higher education, for instance, there are at present about 100 universities and 4000 colleges in our country in comparsion with 19 universities and 636 colleges in 1947-48. Enrolment in these institutions has experienced a ten fold increase during two and half decades. Such an expansion is motivated by the enthusiasm of providing equal educational opportunities to all the people and by the calculated desire to provide sufficient skilled manpower to the economy in its programmes of accelerated development.

Whether the country has achieved success in respect of these twin objectives or not, is another question worth investigating further. However, the unprecedented expansion in education has generated the following set of consequences: (1) over-expansion in education in relation to the demand has created the problem of educated unemployment, (2) over-expansion has led to devaluation of education and (3) over-expansion has resulted in a severe financial crisis for the educational sector as a whole. The objective of the present paper is

to examine the second of these implications of educational expansion. In the first Part the concept of devaluation in the context of education is examined in its different dimensions. Next the paper intends to quantify the degree and pattern of devaluation of education in general and of higher education in particular, in the context of the Indian economy. Finally a few suggestions are made to tackle the problem of devaluation.

It may be interesting first to develop a theoretical construct to explain equilibrium and disequilibrium in the educated labour market. Let W be the wage fund, the distribution of which among various jobs is given by $W = n_1w_1 + n_2w_2 + \ldots n_mw_m$ where n_i's are equilibrium magnitudes of labour in different (m) jobs. According to the traditional explanation, if supply of labour is larger than demand, then with a given wage fund (W), equilibrium is attained by a fall in W_i's. In which job, wage rate will fall to a larger extent, would depend upon the relative excess supply of labour in that job. However, to be more realistic, we have to incorporate the fact that W_i's can only rise but cannot fall. Also, the skill factor and the factors contributing to the skill generation have to be explicitly introduced.

Two constituents of wage rate may be considered, viz., the wage rate due to occupation (w_{ji}) holding other things constant and the wage rate due to education (w_{ei}). Hence $W_i = w_{ji} + w_{ei}$. One may distinguish wages from job (w_{ji}), fromw ages from education (w_{ei}). While education is linked with jobs or occupations, the occupations are directly linked with earnings*. The relationship of education with earnings is indirect. With excess supply of educated persons, even though w_{ji} does not fall w_{ei} has to fall. This fall in w_{ei} is however realized, indirectly by employment of ei+k for job i. Before the disturbance, $w_{e(i+k)} > w_{ei} > w_{e(i-k)}$. After the disturbance, due to excess supply $w_{e(i+k)} = w_{ei}$. Thus $w_{e(i+k)}$ has fallen, in the new equilibrium. This effect is indirect because education itself is indirectly related to earnings. If education-earnings have to undergo any change, they have to be realized through the media of occupations or jobs. In such a situation, employers may not alter job earnings, but would alter education earnings indirectly raising the educational requirements for the given job. In other words they have considered the money value of given education as lower than in the earlier situation.

*An attempt was made by this author to quantity the education effect and occupation effect on earnings from the Bombay Survey data. V.R. Panchamukhi and P.R. Panchamukhi, Socio Economic factors and Urban Incomes in H.N. Pandit (Ed.) *Measurements of Cost, Productivity and Efficiency of Education*, NCERT New Delhi, 1969.

This is the phenomenon of devaluation of education. This is the case when there is a strong working of what one may call as job-wage-illusion, meaning that job-earnings may not be altered but education earnings may be reduced. Reduction in education earnings is possible for, there is no organization of labour according to educational categories. On the other hand, labour is well organized according to occupational or job categories and hence job wage reduction would be strongly opposed.

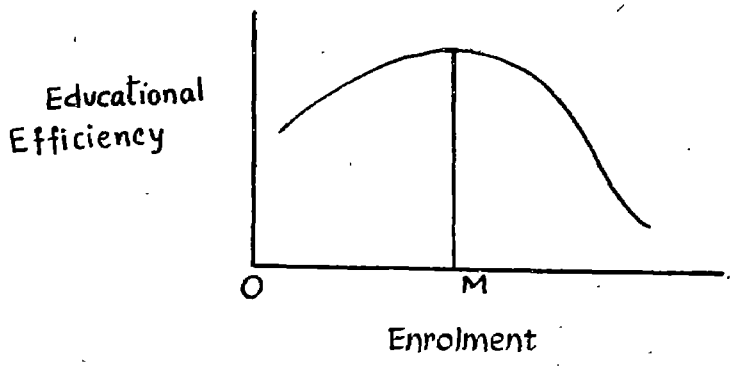
When there is excess demand for persons with education ei in job i, then w_{ei} may rise. w_{ei} may rise to be equal to $w_{e(i+k)}$. Since due to excess demand for ei+k also the $w_{e(i+k)}$ would continue to rise, the equilibrium is attained through the medium of jobs, by reduction in the educational requirement of job i, so that $W_{e(i+k)}=W_{ei}$. In other words, the employers may employ labour with lower educational qualifications than in the pre-disturbance situation. This may be termed as the phenomenon of over-valuation of education in terms of jobs, or under valuation of jobs in terms of education.

Devaluation and Exploitation of Education

Does devaluation necessarily mean exploitation of the educated persons? Why do employers employ persons with higher qualifications for jobs which require lower qualifications? Devaluation may amount to exploitation of education by employers only if the content and utility of education does not undergo change in the new equilibrium situation. If use value of education ei + k falls in the new equilibrium to be equal to the use value of pre-equilibrium ei, then payment of w_{ei} to persons with ei+k does not mean exploitation. The employers are fair to the educated labour, for they hire such labour on wages which are equal to labour productivity. This only means that education has itself declined in value. (or that education has been offered to individuals with lower intrinsic ability and resultant lower potential for skill or utility. —*Ed.*) If on the other hand, value of education to employers has remained the same, and ei+k receives wages w_{ei} then there is a clear case of exploitation. Hence what needs to be examined now is whether in the course of the expansion of education the value of education comes down.

Assuming that use value of education and educational level or efficiency of education are identical, one may make the following general observations. **(a)** Larger the enrolment, higher would be the educational efficiency upto a certain level of enrolment, other things remaining the same. Learning in small groups is found to be more

effective than learning individually. **(b)** Beyond this level, every marginal increment in enrolment would mean reduction in educational efficiency at increasing rates. Learning in large groups is less effective. Bringing these statements together, we may get an inverted U-shaped schedule relating the educational efficiency defined as academic excellence imparted to students, with the differing enrolment size of the



educational sector. If other ancillary services and facilities are held constant, it is possible to visualize a particular enrolment size, which is most efficient, (OM, in the above figure) from the point of view of educational level. **(c)** The most efficient enrolment size may be different for different types and stages of education. Thus, the enrolment efficiency schedule may start falling earlier in case of some types and stages of education than in case of others. This fall may be steeper for some and less steep for others (e.g. in case of Science subjects, involving the use of laboratory, the educational efficiency may start declining earlier and faster, as compared to Arts subjects as one moves along the enrolment scale). In an institution, with enrolment larger than the most efficient size, the output of education (i.e. educated individuals) would have smaller educational value than the use value. If such an output receives lower earnings from the employers, or employers hire labour with higher educational qualifications than required with the given wage rate, then this action cannot be considered to be a case of exploitation of the educated people.

If there is a divergence between the use value of education to the employers and the educational efficiency of that education or academic excellence, then devaluation may lead to exploitation of education if the use value of education is larger than the wages. It may be difficult to make a generalization about these relationships for different types and levels of education.

Apart from the market forces of excess supply and small demand for a given type of education, there is yet another factor which motivates employers to pay low wages to the more qualified persons, or to hire persons with higher qualifications than required on a given wage. When persons with higher qualifications are employed on a smaller jobs, employers will have to necessarily incur extra costs on retraining and re-orientation of such employees for the jobs. More qualified persons are less prepared both mentally and physically, to do smaller jobs. If this is the case, then employment of such persons may appear to be an irrational act on the part of employers. However, employers may recover these costs by paying less to the employees. According to the precise calculations the capitalized value of wage loss for higher educated persons (Capitalized value of [We(i+k)—wei] should be equal to the training costs or costs on orientation courses. One may subtract from these costs the money value of psychological gains that the employers may get from employing highly educated and qualified persons in their concerns. Thus, while devaluation of education may or may not mean exploitation, it may more probably mean additional costs to employers.

Other Implications

Devaluation has more serious implications for manpower planning in the economy. In manpower planning a correspondence is established between manpower and education of different types. On the basis of this correspondence and projections about the behaviour of different sectors of the economy, during the next 10-15 years, manpower and education are also projected for this period. In devaluation of education, the very basis of manpower planning is disturbed, in that the erstwhile correspondence between manpower and educational qualifications no longer continues to hold. Hence, the projections of manpower according to educational qualifications, for the next 10-15 years, based upon the pre-devaluation correspondence would be grossly erroneous estimates. If education develops on the basis of such estimates, the supply of educated individuals would be further diverging from the demand, leading to further devaluation or overvaluation of education. Unless the degree of devaluation is properly estimated and the estimates are incorporated into the calculations of education-manpower-correspondence the projections of manpower would turn out to be wrong. Manpower planning would thus be a major casualty in the process of devaluation of education.

Another adverse implication that follows from devaluation is that

the superficial link between degrees and diplomas with jobs would be further strengthened and the attempts at delinking the jobs from degrees and diplomas would be further weakened. For, as the employers prefer persons with higher educational degrees than required, aspirants for jobs would be motivated to better their educational qualifications. This wild chase for degrees would continue as long as the devaluation of education continues. Greater the degree of devaluation, greater would be the intensity of desire to have additional qualifications. This would further accelerate the degree of devaluation of education.

Another implication of devaluation worth noting is the resource costs of additional education. Resources would be spent on getting additional qualifications which would not be recovered in the job. Further the employers will have to incur extra resources costs on orientation courses. Hence the resource cost of over-expansion and devaluation of education would be very large and would be rising continuously. A developing country with devaluation in education cannot afford such heavy costs.

If over expansion of education means devaluation, has education been devalued in India? What is the degree of devaluation? Is it uniformly the same in all types of education? Does devaluation mean exploitation of education in India ? These are some of the questions that need to be investigated. We attempt below to tackle the quantification of educational devaluation in India during the past few years.

Methodology of Quantification

The method employed for quantification is very simple. Since devaluation is based on the preferences and actions of employers with regard to the employment of educated persons, it is necessary to know the employers revealed preferences and actions. Employers' *preference* for a higher educated individual for a job which does not require that higher educational qualification, can be termed as the ex-ante or planned devaluation. Employer's *action* of employing a person with higher qualifications then the job needs may be termed as ex-post or realized devaluation. In a situation of extreme excess supply of education, planned devaluation may give a lower limit and hence realized devaluation may be larger than planned devaluation. For, the employers find that there is a very large supply of people with still higher qualifications than they expected and from among them, they can employ the required number on given jobs. What we are attempting to measure below is the planned devaluation of education, which only

gives a lower limit to the actual devaluation that has taken place in our country.

How should we understand the preferences of employers for diffrent educational qualifications vis-a-vis given jobs? It was felt that the notification by employers about the job vacancies and the stipulation about the qualification and experience, may readily give this information. The data were, therefore, recorded from the vacancy registers published in the leading news paper *Times of India* (Bombay edition) about the following seven items. (a) Specification of the job, (b) Sector of employment: name of the concern or the field of its operation, (c) Location of the concern, (d) Educational qualifications to be satisfied by the applicants, (e) Number of years of experience preferred, (f) Whether the employer is giving an in service training to the selected candidates and (g) The amount of pay for which the candidates are eligible. The data about the above items were collected for all the jobs notified in three selected years viz., 1954, 1964 and 1974. (in all the months of these years). Thus—112 jobs were covered for 1954, 379 jobs were covered for 1964, and 319 jobs were covered for 1974. Data for each year were grouped according to the identical jobs. Thus, in 1974 as many as 11 clerical posts were notified, 35 posts of Stenographers were vacant, 48 Engineers' jobs were to be filled in and so on. A comparison of the average educational qualifications—defined in terms of the average number of years of schooling for the given job for 1954, 1964 and 1974 would give us an idea about the extent of the planned devaluation of education for that job. Similarly the average number of years of experience desired for a given job and the average pay were also calculated for each job separately for these selected years. These data about the common job groups are given in Appendix table.

Results and Interpretation

For all the jobs taken together the average number of years of schooling and the average number of years of experience were calculated foreach of the selected years and these averages are reproduced in Table 1. From this table we find that there is a small degree of overvaluation of education as between 1954 and 1964, and devaluation of education as between 1964 and 1974. Even though as between 1954 and 1974 also education is devalued (by 5.82 percent) the extent of devaluation is larger as between 1964 and 1974 (by 6.92 percent). Sometimes employers may demand larger number of years of experience even if they do not significantly alter the number of years of

KP 3900

Table 1

SCHOOLING AND EXPERIENCE FOR JOBS

Years	*Average Number of years of Schooling for all jobs*	*Average number of years of Schooling and Experience for all jobs*
1954	14.61	18.11
1964	14.46	16.69
1974	15.46	18.69

schooling for the given jobs. This is yet another way of devaluation of education. Average number of years of schooling and experience for all jobs in the three selected years presents another measure of valuation of education by the employers. As between 1954 and 1964, education is overvalued according to this measure to the extent of 7.84 percent. As between 1954 and 1974, education is devalued to the extent of 3.2 percent while as between 1964 and 1974. devaluation is large as 11.04 percent. From both the methods of calculations we find that the process of devaluation of education has started much faster from 1964.

Though the aggregative calculations provide broad insights into the process of devaluation of education it is much more meaningful to study the extent of devaluation for different job categories separately. This would enable us to understand as to in which type of job education is devalued to a larger extent. For this purpose, the data for each year were grouped into different job categories. Twenty eight job categories were identified for which intertemporal comparison is possible. In order to ensure that each job of declared designation is fairly homogeneous in respect of the conditions about the schooling and years of schooling and experience to be satisfied by the candidates, and also the salary for the job, the coefficients of variation about these three variables were calculated for jobs in each groups. If coefficient of variation about the conditions about the education and experience is fairly small for a given job in a year then, we may assume that the job under consideration is fairly homogeneous. For examples 35 Stenographer's jobs notified in 1974 had a small coefficient of variation of years of schooling and experience (9 to 14 percent). Hence all the 35 jobs are fairly homogeneous. Of course, homogeneity of a job has to be examined also from the work content of that job. However, the conditions of employment may indirectly reflect the nature of work content also. Coefficients of variation for these conditions

about education and experience for the jobs are found to be small. In majority of the jobs the coefficients are around 10 percent. It is also interesting to note that the jobs have become more homogeneous over time, as the coefficients of variation have declined in value over time. In case of the amount of pay for majority of the jobs, the coefficient of variation is fairly high (above 25 percent). The salary for the same job in different concerns may vary markedly, for, it depends upon the financial soundness and capacity to pay. Coefficients of variation for some of the jobs are given below:

Table 2

COEFFICIENTS OF VARIATION (%)

Job categories years	*Years of schooling*	*Years of schooling & experience*	*Average pay for the job*
1 Stenographer			
1954	13	16	40
1964	6	9	33
1974	9	14	30
2 Engineer			
1954	5	17	148
1964	3	3	40
1974	2	14	49
3 Accountant			
1954	13	17	73
1964	10	13	21
1974	4	9	29
4 Clerk			
1954	—	—	—
1964	12	16	28
1974	9	13	61
5 Secretary			
1954	—	—	—
1964	8	18	49
1974	7	18	31

Having obtained fairly homogeneous job categories, the next task would be to examine the nature of valuation of education required in connection with these jobs. From the Appendix Table we may develop quantitative insights into the nature of valuation of education. In Table 3 the coefficients of devaluation (in percentage) of education are presented for those jobs where devaluation has actually occured over time:

Table 3

DEGREE OF DEVALUATION OF EDUCATION

	Job categories	On the basis of Years of schooling (%)	Schooling and experience (%)	On the basis of Years of schooling (%)	Schooling and experience (%)	On the basis of Years of schooling (%)	Schooling and experience (%)
		1954-1974		1964-1974		1954-1964	
1	Clerk	27.2	13.5	9.8	17.0	16.0	—
2	Stenographer	20.8	14.8	31.8	52.5	—	—
3	Secretary	—	1.7	0.7	5.6	—	—
4	Engineer (Junior level)	—	—	1.4	8.6	—	—
5	Engineer others	—	7.3	1.7	3.9	—	—
6	Foreman	—	—	11.1	17.4	—	—
7	Lecturer	12.5	25.3	1.93	12.1	10.4	11.8
8	Medical Officer	2.0	3.4	0.60	—	1.5	3.4
9	Nurse	—	—	—	1.3	—	—
10	Chemist	4.5	1.03	—	15.2	89.0	—
11	Accountant	—	7.7	5.2	10.4	—	—
12	Manager	1.2	28.7	3.5	26.5	—	1.7
13	Supervisor	13.4	5.3	4.8	22.4	8.2	—
14	Draftman	—	—	16.4	17.7	—	—
15	Inspector	1.3	—	4.1	19.8	—	—
16	Stores Officer	—	—	5.9	—	—	—
17	Purchase Officer	—	—	11.1	3.7	—	—
18	Sales Officer	—	—	2.2	37.7	—	—
19	Public Relations Officer	—	—	13.3	—	—	—
20	Store Keeper	—	—	7.1	22.5	—	—
21	Telephone Operator	—	—	33.9	66.7	—	—
22	Technical Assistant	—	—	1.3	8.4	—	—

It was found that in as many as 22 jobs out of 28 job categories considered in the education was found to be devalued either directly or indirectly through longer experience specification. The degree of straight devaluation varies between 1.2 to 27.2 during the period 1954-1974, between 1.3 to 33.9 during 1964-1974 and between 1.5 to 89.0 during 1954-1964. For the last period, devaluation is found to have occured in case of fewer of job categories as compared to 1964-1974. Maximum number of job categories experienced educational devaluation (direct) during the period 1964-1974. Even when indirect devaluation through the medium of experience specification is considered the period 1964-1974 itself witnessed educational devaluation in case of maximum number of job categories. The degree of indirect

devaluation of education varied between 1.03 to 28.7 during 1954-1974, between 1.3 to 66.7 during 1964-74 and between 1.7 to 11.8 during 1954-1964. The number of jobs which experienced educational devaluation of more than 15 percent was larger during the period 1964-1974, than during 1954-1964. From the job-wise calculations also, we may therefore conclude that educational devaluation has proceeded faster, spread out wider and assumed more serious proportions during 1964-1974.

It may be interesting to note that the amount of experience desired has actually moved with the number of years of schooling indicating a definite devaluation of education. Results from a simple regression model regressing experience on education bring home this point.

Table 4

EXPERIENCE AND EDUCATION

Period	*Job categories*	*Constant term*	*Regression coefficeint*	*r*
1964	1. Clerk	0.45	0.05	0.05
	2. Stenographer	4.35	—0.35	0.26
	3. Secretary	—3.13	0.42	0.18
	4. Engineer	17.13	—0.82	—0.17
	5. Medical Officer	1.53	0.13	0.17
	6. Nurse	—0.32	0.23	0.18
	7. Accounts Assistant	4.93	—0.20	—0.17
1974	1. Stenographer	1.41	0.98	0.70
	2. Secretary	—10.57	0.96	0.38
	3. Engineer	40.68	—2.12	—0.31
	4. Chemist	—2.20	0.36	0.15
	5. Accounts Assistant	2.21	0.04	0.03
1954	All jobs	3.18	0.03	0.02
1964	All jobs	—0.68	0.20	0.20
1974	All jobs	—10.33	0.87	0.52
All years	All jobs	—2.62	0.36	0.30

It may be seen that in majority of the cases the coefficient of correlation is positive, so also is the coefficient of regression indicating that longer schooling increases the necessity for a longer experience. An interesting conclusion emerges from the comparison of results for all jobs for each year. The coefficient of correlation and coefficient of regression have increased in value as we move from 1954-1974 through 1964. This also supports our contention that educational devaluation has been increasing over time and was maximum in 1974.

Even though from the above analysis we could derive a general

conclusion about educational devaluation, we have not identified the educational groups according to the degree of devaluation. Such an identification is a fairly difficult task for, for many of the job categories, specification about education is not very precise. For instance, the vacancy registers state in case of some jobs that graduates, in Arts and Science, Commerce etc., can apply. In case of Diplomas and Engineering graduates the branch of Engineering is not always specified. However, looking to the nature of the concern inviting application for jobs and with additional information given in the vacancy Registers, the following table has been constructed:

Table 5

COEFFICIENTS OF DEVALUATION OF EDUCATIONAL CATEGORIES

Degree of Devaluation	*Educational Categories*
1. upto 5%	Medicine
2. 5 to 10%	Engineering degree
3. Above 10%	Arts, Science, Commerce, Engineering diploma, diploma in Telephone Operating

Thus, maximum devaluation is felt in case of the educational categories of Arts, Science, Commerce, Engineering (Diploma) and Special diplomas, Minimum devaluation is felt in case of medicine, education of para medical personnel etc. One may note that by and large devaluation is larger in that educational category which has experienced larger expansion in the stock and enrolment. Thus, enrolment and stock of graduates in Science and Commerce education has increased to a very large extent (around 400 to 500 percent within 15 years during 1950-65) and hence educational devaluation is also very large in their case.

Does educational devaluation mean exploitation of education in the context of our economy? No categorical answer can be given to this question unless estimates of indices of academic excellence for each type of education are available. An attempt was made by this author to construct the aggregative index of educational output and to examine the changes in this index over the period 1948 to 1961.* Different variables indicating qualitative and quantitative aspects of educational development were considered, and an index of educational level was constructed by using the statistical technique of factor analysis. The indices of educational outputs are presented in Table 6.

*P.R. Panchamukhi, 'Measurement of Educational Outputs' Conference Number, *Indian Economic Journal*, 1965.

Table 6

TRENDS IN EDUCATIONAL OUTPUTS

Year	*Index of Educational output*	*Quinquennial rates of growth*
1948–49	100	
1951–52	139	55 percent
1952–53	155	
1953–54	164	
1956–57	206	35 percent
1957–58	221	
1958–59	232	
1960–61	258	25 percent

We may recall that during 1954-64, the period for which by and large the estimates of educational output are also presented in the above table, there was a small degree of overvaluation of education. This appears to be in line with the trends of a rise in educational level as shown in the table above. In view of the absence of estimates of educational level for the later period, it is not possible to derive a specific conclusion about the relationship of devaluation and exploitation for that period. However, if the quinquennial rates of growth of educational level are taken as a guide, then, one tends to guess that the rates of growth of educational level have declined during the later period also (1960-74), and perhaps the excessive over expansion has caused the index of educational level itself to fall in the recent years. If this is the case, then the devaluation of education in recent years can be considered to be in line with the declining trends in academic excellence and hence educational devaluation need not be considered to imply exploitation of education. However, as firm estimates of academic excellence are not available, we do not propose to draw categorical conclusions in this regard.

Concluding Observations

From the above analysis of the problem of educational devaluation, a firm conclusion emerges, viz., though devaluation may be an interesting device for equilibrium in the educated labour market, it has several adverse implications and hence it has to be tackled on an emergency basis. We also notice that the problem of devaluation has assumed serious proportions, in our country particularly during the last decade. Most of the general education categories and some of the technical education categories have experienced a very high degree of devaluation. A fundamental factor causing devaluation was found

to be excessive supply of the particular type of education in relation to demand. Hence the straight forward remedy to check devaluation appears to be to bring about the equilibrium between the supply and demand. While raising the demand for education is outside the control of the educational sector, a more direct method would therefore appear to be to check a rise in the supply. Any attempt to control a rise in supply would be defeated unless the superficial link between the jobs and education is effectively broken. Employment in particular jobs would be based upon the performance in the ad-hoc tests to be conducted by the employers themselves. To consider higher education also as a birth right of every citizen is the luxury which a poor country cannot afford. Strict selectivity in admissions to institutions of higher education, supported by the high fee rate policy (followed by a properly phased out subsidy-loan Scholarship policy), may go a long way in averting the academic crisis reflected by the devaluation and financial crisis in education reflected by the near bankruptcy of the institutions of education.

Appendix Table

BASIC DATA ABOUT DEVALUATION OF EDUCATION

Designation		*Average years of Schooling*	*Average years of Schooling and Experience*	*Average monthly salary (Rs.)*
1		2	3	4
1. Lecturer	1954	16.00	17.00	191.66
	1964	19.66	19.00	313.33
	1974	18.00	21.30	736.66
2. Clerk	1954	11.40	14.80	98.33
	1964	13.22	14.33	167.14
	1974	14.50	16.80	330.00
3. Stenographer	1954	12.00	15.33	122.62
	1964	11.00	11.54	192.76
	1974	14.50	17.60	470.66
4. Secretary	1954	15.00	18.00	135.00
	1964	14.50	17.33	475.90
	1974	14.60	18.30	586.66
5. Engineer (Junior-Categories)	1954	17.00	24.00	320.00
	1964	16.77	19.44	374.64
	1974	17.00	21.12	770.00
6. Engineer (Others)	1954	16.00	22.00	432.00
	1964	16.88	20.96	566.87
	1974	17.17	21.77	1062.20

Contd.

1		2	3	4
7. Foreman	1954	16.50	22.50	440.00
	1964	14.40	18.40	340.00
	1974	16.00	21.60	650.00
8. Medical Officer	1954	17.25	20.62	245.00
	1964	17.50	21.33	486.25
	1974	17.60	21.30	491.25
9. Nurse	1954	16.00	17.50	135.00
	1964	12.61	15.44	169.72
	1974	14.20	15.60	247.50
10. Chemist	1954	15.50	19.50	141.66
	1964	28.00	17.12	199.00
	1974	16.00	19.70	650.00
11. Accountant	1954	16.25	17.50	255.62
	1964	15.08	17.08	170.83
	1974	15.86	18.85	605.00
12. Manager	1954	17.00	19.66	350.00
	1964	16.62	20.00	850.00
	1974	17.20	25.30	1590.00
13. Supervisor	1954	14.20	18.80	122.50
	1964	15.36	16.18	194.37
	1974	16.10	19.80	716.00
14. Draftsman	1964	14.00	17.00	150.00
	1974	16.30	20.00	650.00
15. Inspector	1954	15.00	20.00	100.00
	1964	14.60	16.20	210.00
	1974	15.20	19.40	517.50
16. Teacher	1954	15.00	16.00	101.50
	1964	14.50	14.50	195.00
	1974	14.50	14.50	320.00
17. Statistician	1954	17.00	19.00	—
	1964	17.00	18.00	200.00
	1974	17.00	27.00	1500.00
18. Store Officer	1964	17.00	25.00	350.00
	1974	18.00	23.00	—
19. Purchase Officer	1964	15.00	18.00	400.00
	1974	16.66	18.66	675.00
20. Sales Officer	1964	15.00	15.00	200.00
	1974	15.33	16.66	825.00

Calcutta University Library ALIPORE CAMPUS

Contd.

1		2	3	4
21. Public Relation Officer	1964	15.00	19.00	345.00
	1974	17.00	17.00	700.00
22. Laboratory Assistant	1964	14.14	15.42	150.00
	1974	12.60	14.50	—
23. Sales Representative	1964	15.00	15.00	130.00
	1974	14.50	12.60	537.50
24. Medical Representative	1964	15.00	15.00	375.00
	1974	15.00	15.00	450.00
25. Salesman	1964	15.00	17.00	175.00
	1974	15.00	17.00	250.00
26. Store Keeper	1964	14.00	16.00	180.00
	1974	15.00	19.60	—
27. Telephone Operator	1964	11.20	11.40	188.00
	1974	15.00	19.00	600.00
28. Technical Assistant	1964	15.30	16.60	155.00
	1974	15.50	18.00	625.00



Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

New Educational Technology and the Teaching of Chemistry

R.C. MEHROTRA

The problem of improved methods of teaching science has been receiving active consideration of educationists all over the world, particularly during the last two decades. The 'explosion of knowledge' and the 'short doubling period' in most of the disciplines of science have been presenting new challenges to the teachers trying to convey up to date knowledge to the students in the class room. Efforts of this type are not by any means new. In fact, a striking example of this kind is that the development of the periodic table by Mendeleyev in the latter half of the last century is said to have resulted from his conscientious efforts to convey the detailed unrelated knowledge of 60 odd elements known in his time to his students. Fortunately for a teacher in the latter half of the 20th century, much more powerful tools and means of communication have become available and these have increasingly been exploited, depending on the resources available and the enthusiasm of a particular teaching group.

Reasons for New Technology

During the last few years a new term "Educational Technology" has come increasingly in use and the term itself has been defined in different ways. In one definition, educational technology is the application of modern skills and techniques to the requirements of education and training, including the facilitation of learning by the manipulation of media and methods, and by the control of the environment where this reflects on learning.[1]

The developments in modern educational technology have certainly been succeessful in enabling the teacher to communicate a much larger amount of knowledge and facts in a shorter period of time. In spite of this, the emphasis has, naturally, been shifting in the direction of explaining the fundamental principles involved, more clearly and explicitly so that the curiosity of the learner can be aroused and he can then fill in the gaps of factual knowledge as and when necessary and convenient to him. Thus, in view of the fast growing corpus of knowledge, even adults cannot depend mainly on knowledge acquired by them during the period of their education but will have to continue to add to this throughout their lives. In the absence of the teacher, the new media of educational technology assume an even greater importance for the process of adult education. In addition, the growing demands for relevance in education, e.g., for familiarity with industrial processes actually in use, have also led educators to depend more and more on newer means of communication.

Last but not the least has been the problem of rapidly growing numbers of students particularly in some developing countries. Taking the situation in India as an illustrative example, the rates of growth of enrolment at the undergraduate level during the last decade are tabulated below:

Table 1

SCIENCE ENROLMENTS AT THE UNDERGRADUATE LEVEL

Year	*Enrolment of B.Sc. students*
1962-63	168548
1963-64	195297
1964-65	222416
1965-66	251372
1966-67	282897
1967-68	334126
1968-69	383477
1969-70	449778
1970-71	469263

Increases in the number of teachers have not kept pace with the fast increasing numbers of students. Unfortunately, due to rapidly increasing numbers, it has also not been possible even to maintain the quality of the teacher. The situation is not specific to India and other developing countries today. Currently advanced countries like the USSR have also gone through the process at an earlier stage. It may

be relevant to mention here that the most important reason for Russian success in the field of science teaching according to one observer visiting the USSR in 1961 was as follows:[2]

> "Though there are sufficient teachers for the schools, I was repeatedly told there were not enough really good natural teachers. They accept that this will always be the case and set out to ensure that the indifferent teacher has sufficient guidance and sufficient material (apparatus, films etc,) to ensure that he gives a good lesson."

However, at this point it may be worthwhile to remove a fear and misconception in the very beginning viz., that the newer methods of Educational Technology could replace the teacher at any stage even if it be to provide the teacher with more efficient and expressive models and media. In almost all the techniques of modern educational technology, except partly in computer assisted education, the role of the teacher becomes even more important not only in developing more meaningful programmes but also in using them more skilfully in the actual teaching situation.

The main techniques of better education in recent years can be grouped under the following heads:

1. Planned demonstrations,
2. Charts and models,
3. Slides and projections, e.g., TOPS projector (Alyea),
4. Film strips,
5. Tape recorders, either alone or in combination with film loops,
6. Broadcasting and television,
7. Closed circuit television (CCTV),
8. Programmed learning systems and multimedia programmes, and
9. Computer assisted instruction (CAI).

The last three techniques appear to be out of reach for most of our undergraduate colleges and even the universities. Our discussion in the present paper would, therefore, be centered around the first six techniques only and will make special reference to the teaching of chemistry.

Planned Demonstrations

Although the importance of the actual practical experience in laboratory cannot be over-emphasised, yet Chemistry as a body of knowledge today is too voluminous and has been accumulated through too complex a series of efforts to be learnt by purely individual efforts. Even on a modest scale such a programme will require far too many years of study and may be prohibitively expensive even in more ad-

vanced countries. The situation is obviously more difficult in developing countries due to lack of sufficient pieces of equipment and, often, other amenities also. Under the circumstances, the value of planned demonstrations in the teaching system becomes even more important in developing countries. The impact of external stimuli on the visual cortex is now universally recognised as much more lasting.

Lecture demonstrations have to be carefully planned and the technique of demonstration would continue to remain individualistic, as are other qualities which contribute to the success of the delivery of a lecture. It is easier to choose the actual items which ought to be shown but obviously every teacher has to evolve his own technique of presentation. Careful preparation and rehearsal are absolutely essential before an actual demonstration. Before the demonstration, students must be made familiar with what they have to look for and should be given the background knowledge. However, in order to be able to excite their curiosity, they should not be told so much that the element of surprise is lost. There must be ample time at the end of the demonstration for discussions and clarifications. Finally, aesthetics play as important a role in demonstrations as their logistics and technology. As in the practical class room, much more emphasis should be placed on lecture demonstrations through which concepts can be developed rather than on such demonstrations as merely validate facts or/and theories.

Charts and Models

The importance of the use of charts and models has been realised for a much longer time. There have been numerous discussions of the use and abuse of models, e.g., molecular models.[3] There is quite a variety of models available commercially, e.g., Stuart type by Fisher Scientific Company and Dreiding type which have been later modified in the form of Fieser and Prentice Hall models. Ingenious models[4] have been put forth to "represent a chemical reaction by snapping from some ground—state configuration into some transition state configuration and on over to the new configuration after the reaction". Significant use of models has also been suggested by Brown[5] to illustrate orbital symmetry effects in organic reactions. Levine[6] has recently suggested the use of 'Billiard-ball models' for elucidating atomic structure.

The use of charts is one of the most inexpensive methods of representing a large volume of complex facts and data in either a tabular or schematic form. With a little previous preparation, charts can be

prepared by the teacher either on a conventional or on a folding type inexpensive black-board and thus even the cost of paper could be eliminated unless the same charts were meant to be utilized again and again. The highly expressive charts prepared by the Science Faculty of the Open University, UK, could be cited as an example in which considerable effort has been obviously put in to make them as self-explanatory as possible in the absence of the teacher who is not immediately available. Apart from the time saved in representing a wide variety of data or other details, these charts can be available for a more concentrated study by the learner even in the absence of the teacher. In this respect charts are superior to slides projected during the course of a lecture or a lesson.

Numerous charts and models have been developed during the last few years in the universities and colleges in India under the College Science Improvement Programme (COSIP) and the University Leadership Project (ULP) of the University Grants Commission. For example, Dynam Corporation in Bangalore has started manufacture of a number of charts and frame work models under the advice of the Chemistry Faculty of Osmania University at Hyderabad. Similarly, the Chemistry Department at the University of Panjab has developed a number of 3-dimensional models with thermocole spheres and also, an oxidation potential scale as ready reckoner for redox potentials of various cell systems.

Slides, Filmstrips and Projections

Slides have become now a common feature to elucidate some figures or complicated processes during lectures and particularly during research seminars. The slide, in common with the film-strip, has the advantage that it can produce visual images which cannot be drawn on the black-board at all, however skilfull may be the teacher. Since as early as 1940, slides were used even at the undergraduate stage by concientious teachers like K.P. Chatterji in the University of Allahabad, who has donated a few thousand slides employed by him as teaching aids.

The filmstrip, in many ways, shares the advantage of the slide. Both are 'still' media in the sense that they do not attempt to portray motion effectively. Both are low-cost materials, available in black and white or colour, easy to store and usable at the desired pace; each picture can be projected on the screen as long as desired. While the slide is an individual picture, the filmstrip is an organised presentation of many pictures or frames. Filmstrips are usually accompanied by self-

contained teaching notes. As such, a skilfully made and carefully planned filmstrip provides, in one packet, illustrated teaching material and well organised text on a particular topic. Single concept loop films have recently been developed by Bhide in the Department of Physics at the University of Poona.

A novel use of film sequences in multiple choice tests has been suggested by Oliver and Roberts[7]. According to them, this innovation would be more useful in testing the candidates for their capacity of (i) observation (the ability to make accurate observation) and (ii) their experimental skills (their ability to use laboratory apparatus and the common tools of science) in addition to assessing them in the usual manner for qualities of recall, for comprehension, for application and for evaluation[8].

Even in less developed countries like India, over-head projectors have become commonly available during the last few years and these make it possible for the lecturer to go on projecting material as he is writing it without turning his back to the class, which was essential when he depended only on the black-board and the chart.

To demonstrate actual reactions and their progress in the field of of Chemistry, a significant development was made possible by the innovations made by Alyea of Princeton University who developed a special projector which has become popular under the name of TOPS.

One of the main attractive features of these innovations is their low cost and hence their possible availability even in developing countries.

More sophisticated projection systems have been developed in which stereoscopic projections of molecular models and other materials[9] have become possible. Buckingham[10] has suggested the versatility of time-lapse double projector for Chemistry teaching, in which effective use is made of the first image fading out while simultaneously the image from the second slide is projected by means of a mechanical or electronic arrangement.

Films

Movie films are also being used for recording scientific experiments and as such they have a special significance in higher education from where research in new ideas emanates. Films on Surgical Operations were made as early as 1910 and their use for recording scientific experiments commenced from 1924. Such use of the film is important for disseminating information about new contributions made by scientists and scientific institutions and for making closure study of a

skill or an experimental operation from vantage point.

A critical analysis of the role of educational films has been presented by Robert W. Wagner[11]. The role of films in the educational process was realised by the Ministry of Education, Government of India, as early as 1947 with the establishment of a Film Library as a part of its Audio-visual section which was responsible for providing leadership in the use of Audio-visual aids and was concerned with import as well and indigenous production of these materials[12]. It is now functioning since 1965 as a Department of Teaching Aids under the National Council of Educational Research and Training, which has also now established a Centre of Educational Technology at New Delhi. Recently the establishment of an Indian Institute of Mass Communications has further emphasised the importance of film and other mass media in communication and education and the States and Union Territories in India have set up Audio-visual Departments. Twenty-two universities provide for audio-visual education and training. Audio-visual education is available in 17 Teachers' Training Colleges on a compulsory basis and in another 75 colleges on an optional basis.

The use of films became popular in India with the introduction of Summer Institute Refresher Courses in early sixties when a large number of Chemical Bond Approach (CBA), Chem. Ed., Physical Sciences Study Committee (PSSC) and other films were included in these programmes. Since then a very large number of films have been procured from all over the world and there is a plan to prepare these in Film and Television Institute of India at Poona with the cooperation of the university there.

Available films in science can be classified into two broad categories: (i) Concept Films, (ii) Curricular Movies in which, for example, a packet of 15 to 20 films can cover an entire course of, say, General Chemistry for beginner students. Films on topics like Molecular Vibrations and Spectroscopy, Crystal structure and Atomic structure and Symmetry have become very popular. Davies[13] has emphasised that the film induces an extra-ordinary power of imagination for the invisible phenomena and simplifies the complex concepts which are difficult to understand merely on the blackboard. For example, beginners in Chemistry face much more difficulties in understanding the basic concepts of atomic and molecular orbitals and a successful attempt to explain these rather abstract ideas has been made in a Chemistry Study film by using either darts or the movements of a bird.

The addition to the above prescribed or curricular themes, films on chemical industry in general and chemical processes actually employed in a region or country would be of great value in not only

making learners aware of them but will also greatly enhance the relevance of any course. Such films could be of great value for lay public also in emphasising the useful role that Chemistry is playing in industrial processes and economic growth of the country. These 8 or 16 mm movie films can be used more meaningfully and have a wider audience if they can be freely dubbed into other languages or used with subtitles.

Tape Recorders and Film Loops

The utility of simple tape-recorders which use the medium of sound only has been enhanced by loops in which both visual and sound effects are utilised simultaneously. With the increasing availability of tape-recorders, these are being employed more and more commonly in Chemistry teaching also. For example, the American Chemical Society has taped the lectures of a number of well known experts on themes of general as well as specialised interest and these have now been available for a number of years. One of the most attractive features of these tapes is their low price, which makes available the lectures of real experts in their own voice to learners even in other countries. In a number of cases attempts have successfully been made to illustrate the points made in the lecture by charts and figures, which the listener is advised to look at simultaneously with the development of the subject matter in the taped lecture.

The use of audio–as well as video-tapes has been extended from classroom teaching to the evaluation of question papers.[14–18] A lecture of, say, about one hour could be prepared in segments of about ten minutes each, so that at the end of each segment meaningful discussions could be held in the class room or laboratory and these could be recorded along with the previous ones. During the evaluation, it has generally been found that evaluators need to comment on certain errors committed by candidates in their answer papers and they also wish to convey their suggestions to the students.[16] However, it does not seem feasible to contact the students at the time of evaluation and thus teachers write down their comments on the answer papers. This process causes a number of repetitions and also consumes valuable time of the teacher. If this is not done immediately, then as the time passes, the memory of the teacher also becomes faded as to what sort of exact comment he had thought earlier for a particular error during evaluation. These difficulties may easily be overcome by the use of video-tape, by means of which a better explanation of above errors could be accomplished and then could be played in the class room at

the convenience of both the teacher as well as learners. An additional advantage, again, is that the discussions in the class room can also be recorded, if the above comments are taped in small segments.

It has generally been observed that students are enthusiastic to hear a difficult lecture at least twice or to hear a missed lecture. This could be accomplished by means of audio or video-tape recorder which can be played and replayed. Rouda[17] has recently reported that the junior-level physical chemistry students at the University of Wisconsin have prepared video-tapes. An additional advantage of these is that the recorded lectures could be improved and reimproved after discussions between different group of teachers and students.

In view of the rate of availability of the indigenously manufactured tape recorders for the last few years, their use is increasing at a rapid rate in countries like India as well. Very soon, it is hoped that some professional society or other agency would attempt to prepare tape lectures by prominent chemists within the country to be made available to other universities and particularly to institutions of higher learning in isolated places where due to paucity of funds only very limited numbers of teachers can be provided for dealing with a large variety of highly specialised topics in the curriculum. With the use of these taped lectures of specialists, closely familiar with the local conditions of land, the teachers as well as the learners in smaller colleges could go through the processes of hearing the tape once or more than once together and then the teacher with his larger background of knowledge could try to explain some more abstract ideas to the students through a meaningful dialogue.

Broadcasting and Television

The use of the medium of broadcasting for educational purposes has been excited the attention of the educators for a long time. All India Radio (AIR) stations have been broadcasting programmes for the universities for over three decades now and since 1947 special frequencies have been allotted for the same. For the last two decades, the importance and objectives of these programmes have been recast so as to bring to university students, the results of advances in various fields of knowledge and also to inculcate the habit of group discussions among them. Even regional stations of the AIR are highly receptive to any suggestions for a series of lectures around a central theme. For example, about a dozen talks on the nature of chemical bonding and their role in reactivity was broadcast by the station of Jaipur in 1973-74 and a survey of the reactions of college and university students

of the area was highly encouraging.

Apart from the utility of broadcast for regular students who can profit by this additional material over and above the lectures they could hear in the class room, the utility of this medium has been exploited by the AIR in the form of the "University of the Air" since September, 1966. Through this project the efforts of the School of Correspondence Courses, University of Delhi, are being supplemented and reinforced by talks planned on a variety of subjects.

A novel application of broadcasting has been developed, according to newspaper report[19] for actual broadcast of the examination paper in Israel during this summer. Apart from saving any paper and printing cost, this novel idea has another attractive feature that secrecy can be maintained more effectively (though external assistance for unfairly assisting examinees could also be provided more expeditiously! —Ed.).

Although radio broadcasting is an efficient and profitable tool (comparatively very low cost for teaching purposes), it suffers from the disadvantage particularly in the field of experimental science in the inability of the speaker to project any charts or demonstrations. These deficiencies have been overcome by the wider availability of television broadcasting which has in other countries, been used more and more[18], [20-23] in Chemistry tleaching during recent years. The new advantage of television in contrast to other audio-visual aids like films is its built-in system and distribution which enables students and teachers to watch the programmes telecast by the national or regional television centres without the aid of any technician. Since the programmes are 'live' or record actual life, they leave much greater impression on the mind of the audience. The medium of television is extra-ordinarily effective in demonstrating intricacies of the inner parts of an equipment or experimental set up. With experience, constant efforts are being made for raising the effectiveness of television broadcast as a teaching medium. For example, Coldevin[23] has laid stress on the following four points: (i) planning, (ii) projection strategies, (iii) dissemination consideration and (iv) evaluation criteria.

The first major attempt in India to utilize television for instructional purposes was made as early as 1961 in collaboration with the Directorate of Education, Delhi, and the Ford Foundation. By late 60s, 308 schools in Delhi State were equiped with 535 television sets, thus extending the benefit of television to 1,32,000 students.

Till recently the use of broadcasting and television in the field of science teaching was considered to be only supplementary and not as an integral part of a planned out curriculum. The experiment of the

Open University in UK has for the first time demonstrated that courses in even experimental sciences like Chemistry could be dealt with efficiently through the aid of special experimental kits to be made available to individual learners and the instructions for the use of such kits for laboratory experience could be provided by written texts supplemented by actual demonstrations through television programmes.[24] The extra-ordinary success achieved by the Open University experiment in catering for courses in science and technology has for the first time modified to some extent the essential and unavoidable role of fact to face teaching in such courses at least to a large extent. The new media of educational technology have potentialities of being developed.

Conclusion

Apart from the foregoing, equipment of Close Circuit Television (CCTV) also is getting less expensive and being more easily available within the country. Work on programmed learning has already been initiated by some university departments of Education but more particularly by the Department of Psychological Foundations of the National Institute of Education which has conducted several courses in programmed learning for teachers in schools and in training colleges. More concerted efforts in this direction would be required in the sphere of Science education.

It is a happy sign that the University Grants Commission is now laying particular emphasis in the direction of Educational technology. It has launched a new scheme of Science Education Centres, in addition to the COSIP and ULP projects which have been contributing significantly in this direction. From his wide acquaintance of teachers working in a large number of colleges and universities, the author has found an awareness and eagerness in the teaching community in general to contribute their mite in this direction and what is mainly needed now is to provide them support and a sense of direction.

References

1. Unwin, D., "Educational Technology", *Times Educational Supplement* January 12 (1968).
2. John L. Lewis of Malvern College quoted by Boulind, H.F., *"Penguin Science Servey"*. (Ed. A. Garatt), Penguin Book Co., London (1963) P. 166.
3. Peterson, Q.R., *J. Chem. Educ.*, 47, 24 (1970).
4. Platt, J.R., *Science 131*, 1309 (1960).

5. Brown, P., *J. Chem. Edu. 48*, 535 (1971).
6. Levine, F.S., *Educ. Chem. 11*, 84 (1974).
7. Oliver, P.M. and I.F. Roborte, *Educ. Chem.*, **11**, 132 (1974).
8. Mathers, J.C., *Educ. Chem. 4*, 1, 2 (1967).
9. Mc Grew, L.A., *J. Chem. Educ. 48*, 531 (1971).
10. Buckingham, *J. Educ. Chem. 11*, 159 (1974).
11. Wagner, R.W., *Audio-Visual Communication Review. 10*, 275 (1962).
12. *"Audio-Visual Aids in Higher Education", Report of the Committee appointed by the University Grants Commission New Delhi* (1969).
13. Davies, C.T., *Chem. Brit. 10*, 299 (1974).
14. Nienhouse, E.J. and E.G. Nash, *J. Chem. Educ. 48*, 141 (1971).
15. Barnard, W.R., *J. Chem. Educ. 49*, 136 (1972).
16. Ward, T.C., *J. Chem. Educ. 49*, 267 (1972).
17. Rouda, R.H., *J. Chem. Educ. 50*, 126 (1973).
18. Leedham, J.F., *Aspects of Educational Technology* Vol. 7, (1973) pp. 187.
19. *The Times of India* New Delhi, March 26 (1975) p. 5.
20. Wolfgang, R.L., *J. Chem. Educ. 48*, 22 (1971).
21. Garland, J.K., *J. Chem. Educ. 48*, 207 (1971).
22. Barnard, W.R., *J. Chem. Educ., 47*, 318 (1970), *50*, 66 (1973).
23. Coldevin G.O., *Aspects of Educational Technology*, Vol. 7, (1973), p. 91.
24. Holister, G.S., *Chem. Brit.*, **9**, 161 (1973).

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Relevance, Renovation and Processes of Change

D. P. PATTANAYAK

Many educationists and statesmen consider innovations in education and change in the pattern of education as an essential condition for social change in India. Labels like job-oriented education, vocational education, work experience in education, etc. are created for giving a new look to the old structure. Here an attempt is made to raise some fundamental issues, analyse the causes of chaos and confusion, and examine the relevance of courses of study with regard to the emergent social realities in the country.

Yesterday's Education

The Indian academic system is monolithic in character. All universities, by and large, follow one uniform practice, be it admission, appointment to the faculty, framing of syllabus or examination. Since the appointment of the first Education Commission each of the Commissions has said essentially the same thing about all important matters relating to education. However, after every study and report so much energy is spent on the fringes of educational matter and so many surface adjustments and compromises made that at the most the system could be termed as or equated with 'ordered imperfection'. It is seldom realised that it is impossible to build up an efficient system from inefficient components. By propping up education *as it was*, enriching an outmoted system and building redundancy into such a system, there has been progressive increase of internal conflict and the entire system is condemned to failure.

Good examples of this chaos and redundancy are provided by decision makers in regard to syllabus and curriculum. It is a common belief even among educationists that a mere increase in the number of years of instruction will raise the standard of attainment in a subject. This is why without adequate input in teacher training, improved instructional material, use of up-to-date instructional technology, demands were made in many parts of the country to begin instruction in English from lower classes. Example of a different kind of redundancy is provided by the subject specialists. In our concern to strengthen science and technology, we are often inviting specialists to examine our syllabi of various science subjects. Such experts in consultation with their colleagues in India prepare syllabi in their respective subjects, which may be ideal if those particular topics were taught, but do not quite fit into the general framework either in terms of allocation of emphasis or in terms of balancing of content. Schooling is equated with the composite of the objectives set for subjects and the process as well as the product of teaching is lost sight of.

From Subjugation to Citizenship

After the end of the subject status of our nation there was a natural urge among the people or the country to enjoy the full rights and benefits of citizenship. Unfortunately in spite of all talk about socialism and equality, there continues to be a minority elite and consequently the large majority of the people suffer from a disadvantage. Of course, from the view point of education, both the elite and the non-elite are disadvantaged for different reasons. Our education, instead of being geared to the need of the disadvantaged, has put emphasis on the perpetuation of the elite minority and bestowed rank, status and wealth on those who worship it. On the other hand, all so-called educational experiments have been made at the cost of the under-privileged. A curious contradiction has built up in the process. On the one hand, there is persistent demand for more of the same kind of education even if it leads to unemployment and on the other, there is an equally persistent demand to destroy and scrap the system as it is purposeless and ineffective.

The rising expectations and aspirations of the majority of the people, consequent on the attainment of Independence, were never reflected in the courses of study in our academic institutions. In structure, content and orientation they remain almost unchanged. We have been satisfied with a mere enumeration of class hours, and at best major ideas and concepts, without being bothered about their

relevance either to their times or to ours. Not to speak of modernity, it appears even contemporaneity neither was nor is a major concern of our educationists. I have not critically examined all the courses of study in History. However, on the basis of what I have studied it can be safely generalised that Indian history after 1945 and Indian regional history after 1885 has almost no place in our courses of study in history. What is much more alarming is that in many universities the preoccupation is still British history and what passes in the name of Indian history is an extension of the colonial history in an Indian locale. When Ancient Indian history and Culture is considered to be of antiquarian interest and thus of interest to only antiquarians and modern Indian history is considered inconsequential, it is futile to look either for historicity in a national context or a sense of historical perspective among the youth of the day.

Leadership and Decision Making

Both the structure and the function of the academic system in the country inhibit the pursuit of excellence. Pursuit of excellence presupposes an atmosphere of academic freedom, stimulation and initiative. With the attainment of freedom from alien rule although we achieved freedom from a number of restraints, in the academic sphere this 'freedom from' was never translated into 'freedom of'. The elitist minority enjoyed a few licences because of limited access to education, but neither the student community as a whole nor the people at large got a chance to taste liberty, particularly the liberty to choose and to refashion an archaic reality. The system offered very little variation in approach, courses of study or specific goal oriented training to permit genuine choice.

The infra-structure of the constituent institutions within the system being pyramidal and the sole criterion of upward movement being seniority, there is little scope for competition for excellence even among the faculty. Whatever little scope exists is easily stifled by the seniors who are at the apex of the 'downward flowing system of decision making'. When reward is consequent upon seniority, excellence could be a positive disadvantage. The seniors, who were one time excellents, have no way of coping with the explosion of knowledge and thus very soon become dated in their respective disciplines. Any new knowledge is considered a threat to their charisma as Head and affront to their limited capability and absolute authority. In their effort to retain their privileges the 'Heads' discourage genuine competition and thus the entire system is immuneised to adaptation and innovation.

The machinery which was set up to coordinate activities, determine standards and give grants in aid to institutions of higher education has never in the past effectively used its powers. As a result limits of central corrective action in professionalising education were never established. To illustrate, instead of putting emphasis on its professional character, and providing intensically academic leadershp, the UGC, with participating Vice-Chancellors as decision makers, acted as an apex institution distributing patronage. Both participating and retired seniors continued an obsolescent debate which neither took note of the search for a new set of operational paradigms among the newly trained academics nor of the depth of ferment among the youth in a hurry to telescope the process of discovery and innovation and attain modernity and acquire new and contemporary knowledge. There is certainly incipient conflict even within this new set of goals and their articulation with a policy is a complex enterprise. But the point is that our decision making hardly matched the tasks facing it.

One consequence of this situation is seen in the fact that educational institutions are not relevant and flexible institutions educating for work. Universities have become degree granting bodies and the degree holders are service oriented rather than job oriented. It is common knowledge that an average agriculture graduate has much less grasp of realities than an average illiterate farmer in his field. The same is true of almost all vocational subjects with probably a difference in degree. In most cases there is a disproportionate emphasis on teaching about a vocation rather than on teaching the vocation itself. As a result persons trained vocationally often lack the self confidence to start an independent project where they have to compete and establish their superior talent over other competitors.

In a transitional society struggling to change from tradition to modernity, emphasis needs to be put on the encouragement of giftedness and creativity. This is necessary for breaking the stagnation and inertia inherent in the traditional mode of thinking. Since an infinitesimally small percentage of people participating in the benefits of education is called upon to provide leadership in thought and action, unless this class is creative and gifted, the country is bound to slip into mediocrity. However, when custodians of past knowledge are in the apex positions in education guarding their positions of privilege, it is futile to expect them to encourage giftedness and creativity.

Curricula and Techniques for Excellence

The mode of syllabus making also inhibits creativity. The syllabus

is made two, three or four years before an examination is held. The process of changing the syllabus is consequently slow. To that extent syllabuses are out of tune with contemporary knowledge. Add to that the time gap existing between the creation of new knowledge at different centres of the world and their availability to our system, the tendency in the system is to conform to 'inherited fixed concepts and practices'. In the absence of built-in gurantee for continuing training of academics, the system, instead of encouraging a spirit of exploration, follows the path of least resistance and promotes conformism. This comes into instant conflict with the youth's immense capacity for enquiry and his yearning for change. The present chaos is an expression of this strain.

It is futile to talk of dynamism and changing instructional strategies in a system which is basically static and backward looking. One of the major areas of development in recent times is educational technology. Computer technology, programmed instruction, teaching machines and production of soft ware keeping in view the psycho-social needs of the learners are areas in which advanced research is being done all round the world. All these have yet to make a dent in our system. Wherever a little of the technology is inducted it is soon treated as a status symbol rather than an instructional aid.

Changing educational strategies assume either outmoded past practices or shifting academic objectives in the light of emergent social realities in the context of change. Unfortunately no professional mechanism exists either to define the goals from time to time or examine the suitability of the available instructional apparatus. In the State Secretariat where IAS officers are considered omniscient, very little fundamental thinking in this regard can be expected. Similar results obtain from multiplicity of controls and agencies within the government bureaucracy and from the well-known ineffectuality of vice-chancellors with their less than perfect credentials for academic leadership.

Rehabilitating the Product vs. Rectifying a System

The effort of the academic leaders in India has been concentrated on rehabilitating the product rather than rectifying the system. For instance we continue to multiply degrees, which we ourselves decry, and then undertake programmes of rehabilitation of the degree owners. We create higher positions in the faculty, but promote the products of the seniority system. Very little action has been taken to relate professional status to professional performance. We improve the

subject content, prepare a good curriculum and yet at the same time encourage the textbook to be the master of the class room. By our well-intentioned measures we have started corrective schools, added more resources, more trained personnel and improved physical facilities; but all these have the effect of adding layers to the existing system and do not add up to a wide-angled vision for the education of tomorrow.

It is important to recognise that the dropouts and failures at different levels of education, the mounting educated unemployment, the reported mass copying, factionalism among the faculty and the destruction of academic institutions are symptoms of a deeper malady and signal the rejection of the system by various segments connected with it. Unless efforts are made to radically rectify it to ensure a two way flow of decision making and to relate education to the needs of the community, the system will collapse under its own weight.

Undergraduate Curriculum and Teaching : A Symposium

The problems of undergraduate education are important if for no other reason, because they relate to the vast majority of the almost 4 million students in our higher education system. However, in a period of understandable concern with research and postgraduate work, enough systematic thought has not been given to the contents and methods of undergraduate education. This becomes all the more significant in the context of the projected introduction of the new pattern of secondary education. Higher standards, and new orientations, may be in order. This symposium opens such a discussion. We hope it will be continued and developed both in staff rooms of the universities and colleges and in columns of this *Journal*.

The contributors bring their own background and perspective to bear upon one or more aspects of undergraduate education. V.V. John as well as Bhattacharyya and Patranavis spell out new formats for the first degree. Arun Bose and Radhika Ramasubban, both social scientists, have dealt in some detail with specific content and orientation of curricula. Both J.N. Kapur and R.V. Kamat, scientist contributors have concentrated on new methods and techniques of teaching. The different emphases of the two groups are understandable in view both of the differing temper of scholars in the two areas and the differing levels of certainty and definition already achieved in them. R.K. Yadav stresses the case of the outlying college and the need for equipping teachers to perform their tasks satisfactorily. Surindar Suri raises fundamental social and human issues and emphasises the need to view higher education in their context.

Some neglected facets of the problem remain for future discussion. The scientists may be more concerned with methods but the redrawing of the map of knowledge which is taking place in the natural sciences must sooner or later find reflection in our college curricula. This discussion from the vantage point of various scientific disciplines, new and old, has yet to take place. By the same token, the social scientists may take their methods of teaching and learning for granted but the use of the project, the term paper, the field trip, the discussion in the seminar not to speak of new educational technology has to catch up with them—sooner rather than later.

The issue of specialised honours versus the broad general degree has been raised. There has been near uniformity among contributors that college education should be restricted to the highly intellectually able and should be primarily intellectual or "general" in character. This is rooted so deeply in a particular concept of higher and general education and of the nature of the human person and of the intellect that the possibility of socially useful and relevant work forming the basis of the general education of the general student has been more or less ignored. However, the widely varying types and levels of ability and social background and personality which will continue to remain represented in Indian higher education present a challenge which the Indian university and college have yet to face squarely in terms of the diversity of curricula and learning procedures.

A related question viz. involving a student and the college as a whole with his community and society so as to provide meaning to education in the present and significance to it for the future of the student would also appear most important.

—Editor

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Towards a Meaningful First Degree

V.V. JOHN

An inescapable consequence of the decision to adopt the ten-plus-two-plus-three pattern of school and college courses is the need for reforming and overhauling the first degree programme. The new pattern would make sense only if the two-year course between high school and college were so designed as to serve a twofold objective, namely, to be an adequate preparation for entry into the world of work, and alternatively, for entry into genuinely high level courses of further studies. These expectations in regard to the two-year course are based on the hope that a great deal of what is of academic value in the present first degree courses in our universities, and somewhat more, will be done during those two years. This will oblige the universities to design entirely new degree courses.

Importance of the First Degree

The disrepute of our first degrees has been publicly acknowledged in the Education Commission's Report. 'In international comparisons,' the Report said, 'it would be wrong to compare our first degree in arts, commerce or science with the corresponding first degrees of educationally advanced countries. What is really comparable are our second degrees in arts, commerce and science and first degrees in agriculture, engineering and medicine with the first degrees given by universities in the educationally advanced countries', (*Report*, 12.04). The proposed addition of an extra year to the fourteen that it now takes to obtain the first degree in most parts of the country, would have no justification if this situation is not radically changed.

One should, in this context, take note of a certain *naive* proposal occasionally made for salvaging university standards. The proposal is to relieve universities of the responsibility for undergraduate classes. Undergraduates, it would seem, distract the learned men in the universities whose attention should be exclusively devoted to teaching advanced students and doing research. One wonders whether even this arrangement would satisfy our lofty academics. It may still be found that the standards attained at the postgraduate level are not high, and the new alibi would be that so long as the quality of graduates that colleges send up is low, nothing higher can be achieved. A time will come when even postgraduate teaching would be deemed a distraction from the high pursuits of research. And sooner or later, even guiding research would be reckoned an unworthy distraction, and the top academics would want to devote themselves to pure contemplation.

If the raising of educational standards is our objective, this trend of writing off one level after another of the educational system will have to be reversed. Dr. Zakir Husain used to express his amusement at the simple diagnosis of our educational ills, which seemed to suggest that what was wrong with any stage of our education was the immediately preceding stage. Thus, teachers at the postgraduate level blamed the teaching at the undergraduate level, and teachers at the undergraduate level blamed the high schools. The high school teachers put the blame on the elementary school teachers, who too were not without their alibi, for, what could they do with the vast numbers of 'first generation learners' whom they had to deal with? We have now reached the point where, after primary school, we have to wait till the postgraduate level for any meaningful attention to learning. Even this will not last, considering what the universities already think of those of their M.A.'s and M.Sc.'s who are placed in the third division.

The way to reverse this disastrous trend is to reform each level of the present structure so drastically as to make the next level, as presently designed and implemented, unnecessary. The proposed two-year post-high-school level (call it higher secondary) intermediate, pre-degree, or what you will) should, for instance, make the present first degree courses largely an irrelevance. It will then be necessary to design new first degree courses that will compare on respectable terms with the first degree of universities in the educationally advanced countries, and the Education Commission's lament will no longer apply.

To mention an instance of how this could be done, consider the matter of language studies. The Education Commission recommended, perhaps as a distant objective, that in higher education, the study of

no language should be compulsory. (*Report*, 8.42). The compulsory language courses now prescribed at the first degree level consist of what should have been done in school. The language skills with which students arrive at the university today are often so inadequate that colleges are obliged to arrange remedial classes. The more earnest institutions do this, while others let the students shift for themselves, through the repetitive routine of the language courses, from which they emerge as near-illiterates with university degrees. I recall a discovery I made in the days when I was associated with educational administration, that the proficiency in English expected in the examinations in the eighth class of the middle school, the eleventh class of the higher secondary and the General English of the B.A. were the same! This happens because, at no stage of our system do we clearly determine standards and insist on their attainment before a student proceeds to the next stage. We seem to put our faith in what the mere passage of time will do to the learner. Would this be the reason for our wanting to add an extra year to school ?

When students arrive at the university, suitably equipped with language skills and some capacity for critical thinking, the challenge that this will offer, will make it worthwhile for the best scholars and scientists to teach at the undergraduate level. This will mean a change from the present practice of leaving undergraduate teaching to the juniormost and rawest members of the faculty. Academic standing is now gauged by the level of the classes one teaches; the higher the class, the more exalted one's position in the hierarchy, the seniormost men teaching only those students who do not need any teaching. Under a saner arrangement, freshmen will receive the most attention; most of the teaching responsibility of the faculty will be discharged in the undergraduate classes, postgraduate students being largely expected to be on their own.

Need for Variety and Ambition

What should be the content of the undergraduate curriculum? There is no simple, brief answer. And not all the syllabi prescribed in the various universities in the country, put together, will provide the answer either. The curriculum-maker at this level is actually engaged in exploring the reach of the youthful mind, and would be obliged to acknowledge that we have all sinned by underestimating the capacity of young minds. This may seem an extravagant and disingenuous claim to make, in view of the ubiquitous student stirs against 'difficult' questions in examinations and 'difficult' requirements in the curri-

culum. Neither administrators nor teachers have found it expedient to counter this by explaining to turbulent youth that if the syllabi and the questions were not difficult, we would not need universities and colleges to handle them.

The large percentage of failures at the degree examinations might create the illusion that the examinations represent a high standard, which is beyond the capacity of a large number of the candidates. This impression will not survive any close scrutiny of the proficiencies of those who happen to pass the examinations. In fact, it may be discovered that between a great many who pass and a great many who fail, the difference is negligible. The examinations have become chancy affairs, and the examiner, not generally being called upon to distinguish the good from the bad, but only to adjudge between degrees of badness, gives himself and the public the illusion of high standards by failing a large number. If the standards were really high, students would find the challenge inescapable, work harder and give a better amount of themselves, and fewer number would fail.

The need therefore is for ambitious curricula. To make this possible, we should abandon the uniform pattern that is now being followed not only in all colleges within the same university, but also in all universities in the country. The equivalence of degrees of the different universities in the country need not depend on the sameness of syllabi. There are a hundred ways in which intellectual capacity could be challenged and developed, and there should be a continuous search for new ways. The need for this is the strongest argument for granting academic autonomy to all colleges that are venturesome enough to ask for it.

The procedure now being adopted for bringing autonomous colleges into being will not bear much fruit. The University Grants Commission's invitation to colleges in this regard reminds one, though not too appositely, of Mao's call for a hundred flowers to bloom. Nothing more was heard of the ones that bloomed. The many-tiered procedure laid down for colleges to attain autonomous status has been so discouraging that, until a few months ago, only a dozen colleges had applied for the status. The more enlightened way is to offer autonomy to every college, and give it the option to break loose from the present lock-step or continue to use the cover of the present pattern of affiliation that provides a common curriculum and a common examination. Only the bravest will opt for autonomy at first, but will be joined by larger numbers in course of time. A procedure of accreditation, or some other form of mutual vigilance, could be employed to prevent any lowering of standards. This would be more meaningful

that the surveillance that affiliating universities are supposed to exercise.

A Proposal

Once the freedom to design curricula is won, what use should a college make of it ? Since the possibilities are vast, one can only illustrate. I would suggest the following:

1. *A foundation course,* intensive in the first year of the degree course, and taking such minimal time in the other two years as may be necessary, to introduce the student to what may for convenience be called the 'two cultures', namely the world of values and the world of measurement. This would be done in the spirit of general or liberal education, and could perhaps be done through such programmes as a study of selected Great Books or of what are called Great Issues.

2. *An introduction to the world of work,* consisting of some action-oriented programmes for putting knowledge to work, and also some programme of community service. The work programme could include field work to supplement academic studies, or internship in some trade or profession for a period, either interrupting the work in the college or after it is finished. The college could have work and service establishments like a dispensary, a printing press, a bookshop, repair shops etc., where all the work will be done by students. In addition, the college should also have arrangements with service and industrial establishments outside, to provide practical training to students. As things are, student internees may not be welcome in most places, but as the college community's new outlook and programmes become known, this attitude will change.

3. *A major subject of academic study,* such as are listed in the usual curricula, on which intensive work will be done particularly in the second and third years, supplemented by the study of some related subject or subjects as subsidiary offerings, thus promoting an inter-disciplinary approach. An infinite variety of combinations should be possible, and the student should be encouraged to make his choice in consultation with both teachers and fellow students.

4. *Some programme of independent study,* on a theme related to or included in a student's major or subsidiary fields of study, so as to introduce him to the rigours of research even at the undergraduate level. The student should have a large freedom in choosing his subject for independent study, and the choice could be based on his own answer to the question: What, in your view, is the most serious omission in your curriculum, and what is it you would like to study, left

to your own devices ? Finding the answer to this question, perhaps in consultation with other students and one's teachers, should itself be an invaluable educational experience. The results of such study could be presented in a paper, or in a statement of work done, and this could be discussed in a seminar attended both by students and teachers.

There are those who, from the highest of motives, would severely restrict the scope and range of college learning to those subjects that cannot be learnt elsewhere. This, on the face of it, is a reasonable attitude. There are however some important qualifications to be made to it. Minds differ, and some need formal learning for what others might learn informally. Besides, in the coming years, the walls that rigidly separate the campus from the community will hopefully disappear, and learning would be promoted by greater interaction between the college and the community around. It may therefore be difficult to be dogmatic about what could be learnt in college and what could be learnt outside. 'The learning society' that we dream of, will make most of our structural categories absolescent. A wider deployment and recognition of learning resources, such as are represented by the University Without Walls, and the 'Learning Contracts' on which institutions like the Minnesota Metropolitan State College are based, are possibilities in India too.

Consideration of curriculum-making brings up the subject of job-orientation. As a slogan, it has been some value to our speech-makers, particularly the ones that think up instant, simple remedies to all our educational ills. Three years ago, I got caught in the fervour for vocational courses in Delhi University and even became the chairman of the governing body of its College of Vocational Studies. Some of us were not happy with the name of the College, for, the philosophy on which the programme of the college was based, was wider than its name indicated. The idea was to combine liberal studies with some vocational training. There was no firm expectation that those taking the various vocational courses would take up those vocations on leaving college. For one thing, no study of the job market had been made before admitting students. The chief objective was to train students in habits of putting knowledge to work, and develop in them a less inhibited attitude to productive labour than was common among undergraduates.

Several impediments however came in the way. The college had to go hunting for accommodation, and the hired premises in which it started was soon found to be inadequate for its growing numbers. The programmes finally approved were limited to those that did not

need much equipment nor workshops and laboratories, and the vocations chosen, such as publishing and bookselling, tourism, salesmanship, store-keeping and secretarial practice, were all of the white-collar variety, so that the change in the psychological attitude to work, that was originally contemplated, is yet to be reflected in the programme. At the same time, however, the college made some heartening discoveries in the willingness of trades and professions in the capital city to co-operate with the college by providing opportunities for practical training and scholarships for deserving students. The college is, even so, poised between hope and disappointment. It cannot be claimed to have proved or disproved anything in regard to the viability of vocational courses as a part of a regular, largely academic first degree programme.

It is yet to experiment with work-study programmes, and with off-campus learning which should have a special attraction for a college that does not have adequate classroom space for the traditional ways of college learning. The most serious handicap is that the college has not attained any academic autonomy for designing its own curricula, teaching procedures and examinations. Without the freedom to experiment and to innovate, in the light of the experience that the college acquires in its contacts with the world of work, it will only end up by adding to the moribund stereotypes that our affiliating universities thrive on.

A great part of what has been suggested earlier in regard to the transformation of the quality of undergraduate studies depends for its succeess on the freedom of individual colleges to innovate and to experiment in regard to curricula, teaching and examinations. If the college were to do no more and no less than what the university prescribes by way of curricula, two elements in the reforms suggested earlier would be particularly unthinkable. They are programmes of off-campus learning such as field work and internships, and independent study. In the one, the student enters the world of work and uses it as a resource for learning. In the other, he is inducted into the methods of research, and learns how to conduct scholarly and scientific investigations on his own. There are other areas of the curriculum, too, where the college could use a large degree of freedom. The only constraints that the universities should impose are safeguards to ensure that no college gives its clientele short measure. This can best be done by encouraging self-study by every college, and making the results of such self-study available to other colleges and university departments. This procedure should mutually stimulate the faculty and students to ever higher levels of performance.

Capacities of Teachers

Two objections may be raised to the viability of what has been suggested above. One is whether the existing faculty in our colleges would be able to take on the new responsibilities that the proposed transformation would place on them: such as making new curricula, new ways of teaching, the encouragement of open-ended ways of learning. The other objection, from almost the opposite angle, would be whether, given competent and highly motivated faculty, undergraduate teaching would be deemed an adequate challenge, and whether its new dimensions can be attended to without withdrawing from the far more exciting challenges of postgraduate teaching and research. These objections should receive serious attention.

The existing faculty in colleges have come in for a lot of criticism, and a lot of it is justified. Far too many teachers have turned into 'repetition workers', going through the same routine year after year, turning the high function of teaching into a menial occupation. They have a large responsibility for killing any love of learning with which the young arrive in college. Nothing could be more unwholesome in a university than having to learn from those who have stopped learning. The cure for this is to change the routine of teaching and of learning. With teachers being called upon to work with students in designing curricula, and the students being permitted to be on their own to fulfil part of the curricular requirements, teachers will not be able to live on their over-used intellectual capital; they will have to turn into learners and researchers. The new requirements will awaken dormant faculty, and the young students will have the exciting experience, hitherto largely denied to them, of learning from persons who are themselves learning.

The lament that immersion in the exacting chores of undergraduate teaching would not be possible without withdrawing from the more and intellectually stimulating experiences of postgraduate teaching research will be heard in the postgraduate colleges and university departments. We now have a situation in which the importance of a teacher is gauged by the degree to which he neglects, or is excused from, undergraduate teaching. It may not be denied that the present level of undergraduate studies does not provide any exciting challenges either to the teacher or to the student. But who is to blame ? Even poor syllabi could be made the starting point for ambitious explorations into the world of learning. With new curricula worthy of the name of the higher learning, and freedom to innovate and experiment, undergraduate teaching will become a highly rewarding experience

for the able academic. After all, he must have learnt by now that no ambitious programme of postgraduate studies can be built on the foundations provided by the existing undergraduate programmes. The wise thing to do in the circumstances is to reach down to the undergraduate level and raise it through stimulating the young student to put his largely unused intellectual capacity to work. It will be discovered that the student is capable of doing at the undergraduate level a great part of what is included in the postgraduate curriculum. Thus would the first degree course push up the standards of postgraduate studies.

If research can be done along with postgraduate teaching, it should be equally possible along with the reformed procedures of undergraduate teaching. Notable research work has been done elsewhere by teachers whose formal duties are those of undergraduate teaching. The mutual stimulation that teaching and research provide for each other is an experience that far too many teachers have denied themselves. Fulltime research could be a legitimate function for only a few in any academic community. The others need contact with young learners in the classroom and the laboratory. Besides, teaching the young is the primary professional obligation of the teacher.

It would at the same time be healthy for teachers to recognise that in a good college, it is not teachers alone who teach, and it is not students alone who learn. What should be aimed at is the true academic community, which is an unbroken continuum where no sharp lines may be drawn to separate those who teach from those who learn. Teachers could with profit ponder over Cardinal Newman's observation in *The Idea of a University,* that 'what students do by way of educating each other—through mere rubbing of shoulders together for four years—within an *exciting atmosphere*—is of more importance, both morally and intellectually, than what is done *for* them by the faculty.'

Incidentally, it might seem that if the ideal of the true academic community could be achieved in our colleges, the large college has an advantage over the small one, in that everyone will have so many more to learn from. But there is a limit beyond which size will make relationships impersonal. The right size, within which the learner will feel at home, is to be worked out with reference to resources and environment. While administrators would worry over the size of a college becoming unwieldy, academics should consider whether the college is too small to provide the minimum critical mass that would generate the mutual intellectual stimulation without which quality education would not be possible. Another important thing is to ensure that

college becomes a beneficent influence on the student not only in the fifteen to twenty hours a week that he spends in the classroom, but also in the remaining ninety odd of his waking hours.

Teacher-Student Ratio

A few words, in conclusion, about the teacher-student ratio in colleges. Most discussion I have heard on this theme has struck me as completely unreal. A teacher student ratio of 1 to 20 is supposed to be reasonable, and most colleges envy the few institutions where the ratio is 1 to 10. What do these ratios mean? The usual practice is to relate the total enrolment in a college to the total strength of the faculty and arrive at an over-all figures, which may mean nothing. The real situation may be that 5 teachers of English teach 500 students, 4 teachers of economics teach 300, 2 teachers of philosophy teach 6, and so on. Adding up figures in such a situation will provide no index to the resources and facilities provided. It also takes no note of the differing instructional needs in different subjects and in different kinds of learning programmes. Lectures could be delivered to as many as 100 or 150 at a time. Tutorial work will have to limit the numbers to groups of 3 or 4. Programmes of independent study may require periodical sessions with a guide, where the ratio of instructor and student will be 1 to 1.

The teacher-student ratio is a matter that should be settled through a detailed scrutiny of teaching and learning needs, and the resources available. This connot be done by mechanical calculations in the college office or the offices of the department of education. And considering our chronic shortage of resources, unconventional expedients will have to be employed, including the aid of such educational technology as may be available. To maximize the use of resources, if foı nothing else, every college should have a research cell devoted to the continuous study of its own policies and practices; it should feed data to the faculty and students to facilitate informed discussion of institutional, departmental, and individual needs, as also discussion of the difficult task of matching needs with resources.

The establishment of such a cell will also enable the college to avoid the peril that is ever present in all institutionalized structures, of behaving as though all the answers have been found and all that is required henceforth is compliance and implementation. Involvement of students in the work of the cell will give reality and substance to programmes of student participation and replace the periodical outbursts of discontent with responsibilities and excitement of problem-solving.

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Undergraduate Curricula in Social Sciences

ARUN BOSE

Taking a quick retrospective view of undergraduate curricula in India over the past three decades, one is struck by several things. First, some of the problems or issues have been identified, and talked about, for five decades (or even for more than a century) but very little progress has been made in thought, or action, in solving them. These are the issues such as: (i) 'Westernisation' or 'Indianisation'—dating back to Rammohan Roy and Ishwarchandra Vidyasagar, (ii) 'vocationalisation' as against 'liberal' education,—dating back to Tagore and Gandhi, (iii) the language-content of undergraduate courses, i.e. the role of the mother tongue as medium, of the *lingua franca* etc.—also dating back to Tagore and Gandhi. As we shall see below, some of these problems have not been solved perhaps because, they are insoluble 'non-issues', in the sense either that they defy precise definition, or their solution lies *outside* the educational process. Second, a number of outstanding problems have hardly been identified. To this category belong such issues as: (i) maintaining the quality or 'standards' of undergraduate education (specially in the context of an 'inflation' of college and university level education since 1947, (ii) the twin problems of over-specialization and diluted 'generalist' undergraduate education, (iii) the question of social or political 'commitment' in the content of the study courses etc. Beyond a certain amount of well-intentioned or *blasé* muddled thinking, there has hardly been any attention paid to these problems.

What has just been said strongly suggests that it is worth while starting this article by putting first things first, and trying to set up a

definition of the *function* of undergraduate curricula.

Functions and Key Issues

Though exhaustive definitions are notoriously difficult, we can secure a firm foothold by stating that *any* curriculum ought to fulfil the functions of: (i) standardising the product of the educational process, (ii) maintaining (and improving) the quality of education, (iii) maintaining the 'relevance' of education, (iv) achieving desirable social objectives through education. The first of these can hardly be objected to, since if each educator were free to teach whatever he liked, as the teachers at Nalanda—and Confucius and Aristotle, perhaps were, there would be no set curricula. The second is sometimes ignored. Cynics might say curricula are largely, if not primarily, drawn up to provide a captive market for low-quality money-making 'made easy' texts. The harm done by these texts is not so much that they contain definite *mistakes* (which they sometimes do), but that they condition students to cramming or memorising as opposed to understanding. Hence the best among them help in memory-training, which is useful as a supplement but *not* as a *substitute* for understanding). But, assuming that in the market for the products of education there is a constant pressure of changing quality, as is the case in the market for all products, the curriculum is clearly one major instrument for exerting quality-control, by imposing a check on malpractices by educators and examiners. The third is more or less universally accepted from the times of Macaulay and Rammohan Roy in India, in the sense that education is supposed to equip the educated to face up to the realities of the contemporary, and hopefully the unfolding, world, rather than to inspire them to live in the past. The last refers to a function of education which is strictly distinguishable from the foregoing. What is 'relevant' and 'realistic' may not be what is socially desirable, though what is 'socially desirable' may be highly controversial (specially when it comes close to being identified with what is 'politically' desirable from the viewpoint of either the ruling politicians or of their opponents).

The foregoing makes it clear that any discussion of the functions of academic curricula has perforce to be a wide-ranging one. It is ultimately impossible to discuss candidly problems of academic curricula without raising social questions or questions of politics—of the country concerned and of the world. However, while such questions must be raised, they can hardly be fully discussed or answered, within the restricted scope of the present article. The purpose in

raising them here is to give notice that those who discuss academic curricula by abstracting from social and political questions have much more to explain than they are usually called upon to do.

Moreover, in this article we are not concerned with academic curricula in general, but with undergraduate curricula, which must meet a number of specific requirements.

These are requirements such as more or less clear decisions as regards: (i) choice between rival 'schools' of thought (specially in the social sciences), (ii) nationalisation and internationalisation of the content of courses of study, (iii) the extent and nature of specialisation, (iv) the problem of 'vocationalisation' of education, (v) the question of the suitable medium or media of undergraduate education, and the related questions of the 'link language' in a multi-lingual country, (vi) the modernisation of education.

In what follows, something will be said on each of these issues, with the focus on some neglected aspects.

Choice between Rival 'Schools'

In many subjects, e.g. in economics,[1] the existence of rival schools which explain different classes of phenomena, or compete to explain the same phenomena, is a hard fact of life. The problem is highly inconvenient to teachers at the undergraduate level, chiefly because it is impossible to discuss rationally the merits of rival schools with students before they have been taught any *one* of them. Moreover, it would be disastrous to undermine the undergraduate's confidence in man's capacity to distinguish between what is true and what is false in some meaningful sense, to detect and avoid error, by informing him as is sometimes proposed, that he should *reject* the view that 'A' and 'not-A' cannot both be right.[2] The existence of factually and logically rival testable theories must be recognised. But what is true and what is an error must not be placed on the same footing, unless muddled thinking is made the main object of undergraduate education.

1. Also in political theory, sociology, history. Indeed, the problem is encountered even in modern physics, or in mathematics.

2. See Amlan Datta, Intellectuals and Society, *India International Centre Quarterly*, Vol. 1, No. 1, 1974. p. 73. The rejection cannot be defended with the argument that 'two views....both can be simultaneously partly true and partly untrue'. What is at issue is not the difference between any two views, but views which contradict one another. Besides, one of the views *can* be *false* in some definite sense, and a view which is 'more true' than another should be preferred.

(The fact that in an overcrowded life-boat 4+1=0—the boat sinks when the fifth man clambers abroad—is *no* reason for saying that in general *both* students who write 4+1=0 and those who write 4+1=5 are right.) In most undergraduate courses, both at the Pass and Honours levels, the problem has been solved by introducing the undergraduate student to *one* school, representing the 'mainstream'. The students' introduction to alternative schools is postponed to the Master's degree or even to the pre-Ph.D. level courses.[3] On the sound principle that an undergraduate student should know one school well before he can compare the merits of alternative schools,—this decision is unexceptionable in most cases. However, re-thinking may be worth while on two points: (a) simplicity, and, in the applied sciences, adequacy in terms of applications to problem-solving rather than tradition or inertia must be the criterion in implementing the principle, and (b) the initial introduction of a 'minority' school at the undergraduate *Honours course* level, along with the 'mainstream' school,—should be considered.[4] Thus, to give an example, after nearly a century of neglect (except in the Communist countries), Marxian political economy seems to be on the point of qualifying to be introduced as a full course at the B.A. Economics Honours level.[5] Similarly, it is not enough to have introduced undergraduate Pass and Honours course student of Political Science to the political theories of liberalism, evolutionary socialism, Marxian communism and fascism—as has been done recently in the revised courses in Delhi University. The time is probably ripe for introducing at the undergraduate honours level the political theories of Kautilya's *Arthashastra,* of Machiavelli and the Post-Lenin Marxian political theories of Antonio Gramsci, 19th century anarchism, Fabianism and the modern anarcho-Marxism of Herbert Marcuse.

3. In the history courses in Delhi University, students are introduced to some applications of rival schools of historical interpretation at the M.A. level, and are to be introduced to dominant alternative theories of history in a proposed pre-Ph.D. course. In the economics courses, students encounter rival schools [e.g. Marxian political economy as a rival to modern Walrasian Economics] at the M.A. stage on an optional basis.

4. So that undergraduates go through the exercise of comparing at least two 'schools', and do not make the mistake of taking the 'dominant' school they are introduced to as the last word on the subject.

5. The general Marxian theory of social revolution was introduced in the B.A. Economics Honours course in Delhi University about ten years ago through a topic in the paper on Economic Systems. But the Marxian theory of capitalism is still not taught at the Undergraduate (honours) level.

Nationalisation and Internationalisation of Courses

The issue of 'nationalising' Indian curricula was a genuine one in the past when in the basic stock of human knowledge, Indian problems e.g. the problem of backwardness in the modern period, and Indian contributions e.g., to world literature were under-represented or ignored. It is a genuine one even today, in so far as in the light of modern research, e.g. into history, ancient conjectures and prejudices grafted into the various Indian religious and linguistic sub-cultures can be corrected by 'nationalising' the subject-matter of curricula.[6] On the other hand, spurious 'nationalisation', which forgets that any Indian contribution must stand the test of international competition in the market for ideas can only do harm. Thus, it is a hard truth that neither Gandhian political theory, nor Gandhian economics, nor, for that matter, Nehru's interpretation of history (or his theory of a 'mixed economy') have as yet been formalised in such a way as to secure recognition as novel contributions to human knowledge. Until this is achieved, by a creative writer of recognised international status, it would be a distinct disservice to undergraduate education to 'nationalise' its curricula so as to include a study, say, of Gandhian economics.[7] It would violate one of the basic principles of the acquisition of knowledge, viz. the principle that knowledge is international, which no society ever seems to have gone against without damage to itself. In sum, undergraduate curricula must maintain international standards of competence and significance. The aim should be to ensure that the Indian undergraduate is able to hold his own both with respect to his skills in the acquisition of knowledge (i.e. his competence) and the range of his knowledge (i.e. its world significance).

Specialisation

As regards specialisation, modern trends are (a) an enormous increase in specialisation *between* disciplines, as well as internal specialisation *within* each discipline, but also (b) increased integration, e.g., through common techniques of logical analysis (specially

6. e.g. there seems to be a case for omitting Jadunath Sarkar's study of Aurangzib as obsolete and replacing it by a more up-to-date study.

7. There are indications that Gandhian political theory might still be formalised as an original contribution to human knowledge. But it is doubtful whether the same can be said of Gandhian Economics. On the other hand, modern ecologists might succeed in formalising a Gandhian ecology.

mathematical techniques of analysis), as well as through the establishment of precise links between related disciplines each of which is highly specialised. The introduction of undergraduate honours level curricula for subjectwise specialisation after 1947 was a step in the right direction, away from the earlier pattern of multi-subject common courses for the recipients of both Pass course and Honours course degrees. But at least two problems seem to deserve urgent attention. First, a close watch should be kept on the tendency for modern specialised disciplines to come closer together, or fall apart. This has the implication that courses in closely-related disciplines which are incorporated in a particular Honours curriculum, should be changed from time to time. Thus, the undergraduate History Honours course in Delhi University includes a strong link with the Political Science curriculum via a course on constitutions. It also requires familiarity with map-reading, establishing a link with geography. But there is probably a growing case for including courses in economic geography. The case for including courses in *economic* geography in the undergraduate Honours economics curriculum in Delhi University is, of course, even stronger (specially in the context of the sudden importance of the geo-political economy of fossil fuels)[8] though, indeed, the gradation of courses from related disciplines in a particular specialised undergraduate Honours curriculum, is often a difficult matter. Thus, the B.A. Economics Honours curriculum has recently been revised to include, at last, a course in the basic mathematics specially designed for students of economics.[9] But, as already stated, economic geography, for which there is a strong case, has been left out. Similarly, in a few years time, modern political analysis, based on applications of game theory—which is also indispensable for studying the problem of oligopoly in economic theory proper—may emerge as a strong candidate for inclusion in the B.A. Economics course. Of course, it ought to find a place in the Political Science curriculum long before that. To solve this kind of problem it may be necessary to

8. This is all the more necessary because, in contrast to the pre-1947 situation, it seems possible for a student to reach the B.A. Honours classes now without ever having studied *any* geography at school. On the other hand, partly because of lack of systematic co-ordination between framers of school-level and undergraduate level courses, the obsolete economics taught at the school-level has frequently to be deliberately unlearnt by the undergraduate student. [This is certainly true of Delhi University undergraduate students.]

9. Statistics, some economic history as well as an acquaintance with some political theory [in the course on Economic Systems] have, of course, been included for a long time now.

take a major policy decision to introduce an element of optional specialisation in the B.A. Honours curricula, e.g. by giving the Economics Honours undergraduate the option of choosing either economic geography or modern political analysis (or Marxian political economy, to connect with a point made earlier in discussing the question of rival 'schools' of thought). What would be disastrous in present Indian conditions at least is to seek to 'solve' this problem by abolishing specialised B.A. Honours courses and replacing them by a Combined Honours course,[10] modelled on such a course at Oxford University.[11]

Vocationalisation of Undergraduate Curricula

On this important question, clear thinking is needed on three points: (a) It is scarcely desirable, or even possible, to 'vocationalise' all undergraduate curricula. If 'vocationalisation' means making every undergraduate curriculum 'job-oriented' by abolishing the 'liberal arts' or the 'social sciences' there would be destruction of social consciousness, or a self-educated elite would hold the monopoly of a spurious 'social consciousness', rather as in George Orwell's *Animal Farm.* Indeed, in the present Indian context where entrants from first or second generation literate families are beginning to outnumber recruits from families belonging to the 'educated elite', the cultivation of social consciousness based on rational rather than irrational approaches at the undergraduate level should receive added, not reduced, emphasis. (b) The argument that 'vocationalisation' would solve the problem of educated unemployment is a thoughtless gimmick. Almost all existing undergraduate curricula are, in a sense, 'job-oriented' since fewer and fewer people are able to live without any kind of gainful occupation (even if it is only in the black-market), and some record of formal education improves opportunities for gainful employment (even in the black-market). Of course, commerce curricula, with emphasis on description on a weak theoretical basis, are rather more 'job-oriented' at present than economics curricula (which have a stronger base in analysis). But *both* economics and commerce graduate (as well as

10. As was thoughtlessly proposed in Delhi University and almost accepted, some years back.

11. Covering Philosophy, Politics and Economics. However, such as a course as *one of many* B.A. Honours courses, rather more difficult than one-subject honours courses, open only to First Division school finalists might justify itself.

engineering graduates some years back) face the prospect of unemployment in the absence of effective manpower planning in society.[12] (c) It should be recognised that a growing proportion of those who seek admission to undergraduate courses are those who want a change from the traditional occupation of families they come from (e.g. a farmer's son seeks undergraduate level education precisely because he wants to avoid going back to farming). That is perhaps why the much-advertised 'vocational' courses often consist of passports to occupations which actually have only a fractional share in the total range of occupations e.g. tourism, publishing, stores management, marketing management, as in Delhi University's vocational courses.

12. Ideally, effective manpower planning should adapt *admissions* to undergraduate courses to 'fit' the corresponding intake into paid occupations as provided in an economic plan. If there is no serious problem of large scale educated unemployment (as distinct from a problem of less preferred employment) this does *not* amount to a Procrustean solution. It simply means that students are helped to make knowledgeable choices when selecting their courses. The actual situation in India, which is one of large scale educated unemployment, probably calls for an alternative strategy of compulsory creation of job-opportunities to absorb all who are admitted to undergraduate courses on academic criteria by forcing the state either (i) to give graduates jobs, or (ii) self-employment assistance, or (iii) and unemployment assistance. [The purpose of (iii) is to *force* the state to incur a penalty if it cannot or does not fulfil (i) or (ii)]. The first implication of such a strategy is, of course, that full employment of the educated becomes an overriding objective of economic planning. This can be justified on the assumption that graduates have acquired some socially useful skills at society's expense, which are different from the skills of others, and should not be allowed to decay. Will the strategy intensify the present craze for undergraduate education as a status symbol and an escape from direct entry into productive employment at the school-leaving stage ? It may not, if (i) academic criteria are enforced for admissions to undergraduate courses, and/or (ii) job-opportunities guaranteed by the strategy are made available on the basis of merit-rating and aptitudes, and do not guarantee minimum income-levels which are totally inaccessible to those who are not graduates. [Extension of on-the-job training facilities at little extra cost can make most jobs open to graduates accessible to non-graduates also]. Even if (i) is non-enforceable for political reasons, (ii) can check or at least not intensify present trends.

The least that the proposed strategy can achieve is the introduction of compulsive manpower-planning for the first time in this country by integrating the educational institutions in the process of manpower-planning. It could also serve as the experimental beginning of something bigger, viz. planning for full-employment for *all* job-seekers by forcing the government to guarantee the 'right to work' by offering either jobs or self-employment opportunities or unemployment assistance. For some unspecified reasons, such a strategy has been regarded as such a heresy in an over-populated and capital-poor country such as India, that it has never been discussed seriously. [The doctrine has been that in such conditions, full employment must *follow* and cannot *initiate* growth: all else is fascist demagogy]. But there are no insuperable objections to such a strategy, either in economic theory or arising from the economic practice of such overpopulated and capital-short countries as China, North Vietnam, and now, most probably, South Vietnam.

So, once we come down to brass-tacks, it turns out that 'vocational' courses can serve a useful role provided they are modestly conceived as formalising the learning process in some hitherto 'untutored' occupations, preferably with the accent on introducing improved skills in these occupations.[13]

Language Questions

The inter-related questions of (a) the medium of instruction (and/or examination), (b) the language of administration or the *rashtrabhasha*, and (c) the 'link' language in multi-lingual India, deserve attention, with the stress on some neglected aspects. As regards (a), it should be recognised that for specialised undergraduate Honours-level curricula, there is generally a 'language of the subject' in the sense that there is one principal medium in which the world stock of knowledge for these curricula is most readily available. For example, in Economics, with most of the important texts in German or French (and some classics in Russian and Italian) now being available in English, English is decidedly the principal 'medium'. Whether or not an Indian language will oust English from this position (or compete with French or German as a 'second language' for Economics) is something which depends on the recognition received by original creative work in Economics in an Indian language. To 'banish', by fial English might merely destroy Economics in India (as Economics was nearly destroyed in Eastern Europe when German was 'banished' after the Second World War).[14] Of course, it is most unlikely that the quality of English teaching at the School level can be maintained so as to allow students of Economics undergraduate honours courses to rely on English as the sole medium for learning the subject.[15] Fortunately, we can rely on mathematics as a handy 'second language' for Economics. Indeed, there might be some ground for saying, in paranthesis, that the

13. This is not always ensured. For example, the Delhi University vocational course on publishing makes no mention of the need for a referee system to ensure quality-control by publishers. Absence of such a system is a serious defect in Indian publishing. [Similar treatment of social services like teaching, nursing, community work etc. has not been considered—*Ed.*]

14. Translations can seldom solve the problem, if only because a new language must first serve as a medium for creative original work in the subject, before it becomes a suitable medium for translations.

15. Specially in the context of the rapid expansion of secondary education, which in turn will expand with expansion of primary education.

'first language' of the subject of Economics at present is mathematics, rather than English. Increased use of mathematics in economics has enormously improved international communication among economists, and has also facilitated translation from one literary medium to another. For example, though standard economics texts in English or German were translated into Japanese many decades ago, it was not until the modern 'mathematisation' of economics that some outstanding contributions have been made by some Japanese economists to the corpus of economic theory.

In view of what has just been said, it is obvious that there is no easy solution of the problem of adopting a single language of 'administration' or *rashtrabhasha* in India. Clearly, neither English nor mathematics (!) can serve as the sole 'language of administration' in India. However, until laws are drastically simplified, and/or people become less 'legalistic', it is doubtful if English can be displaced as the 'first language of the legal system' in court proceedings as well as in legislative bodies. On the other hand, it is doubtful if at the lower levels of administration anything will be gained by society, as opposed to middle-men who serve as notary public by avoiding the use of the regional languages most of which are at least as suitable for the purpose as the main candidate for the function of *rashtrabhasha*, i.e. Hindi. Thus, it does not seem that India can rationally avoid a multi-lingual set-up (including the use of English) in administration and politics. The inevitable difficulties of communication can be reduced by extension of the use of a set of 'link languages'.

The politicians' solution of the problem of 'link language' by the suggested enforcement of the 3-language formula (including a non-Hindi compulsory language for all Hindi-speaking undergraduates, and of Hindi for all non-Hindi speaking undergraduates) is, however, preposterous. If forced on *every* undergraduate, it would at best produce polyglots, 3-language specialists, and *nothing* else.[16] However, given the unavoidably multi-lingual nature of Indian society and culture which will be hardened rather than softened with the spread of literacy and education, there is a genuine need for 'link' languages, and also of multi-lingual interpreters. Fortunately, it is possible to take advantage of closer affinities which exist *within* regional 'groups' of

16. It is possible that because Indonesian students under Dutch rule were over-burdened with language courses, they produced many Ph.D.'s, but contributed little to the world's stock of specialised knowledge. Indians under British rule, with a lighter linguistic burden did rather better, as did the Japanese with their basic language of Japanese and mathematics.

Indian languages, than exist *between* these groups (e.g. Assamese, Oriya and Bengali have more in common than any one of them with the Hindi of Western U.P. or Tamil). B.A. Pass course curricula in such groups of Indian languages in different regions, and B.A Honours curricula in such groups of Indian languages, combined with optional courses in one major foreign language, or in modern linguistics or in Indian politics (along with subsidiary courses in Indian history and economics)—could equip some undergraduates to become trained interpreters, translators, legislators or lawyers in the India of the future.

Modernisation

On this question, the key ideas which should receive attention are: (a) As already indicated earlier, many undergraduate curricula *are* obsolete, specially in the social sciences; (b) But *all* are *not* (though it is sometimes convenient for teachers to pretend that it is so.[17] (c) The degree of 'relevance' of curriculum, interpreted to mean its direct contact with present day 'realities' or facts or its capacity to interpret contemporary events, cannot be treated as the *only* criterion by which 'relevance' is judged. The suitability, i.e. simplicity and teachability, of theories which can do so must also be taken into account when revising undergraduate curricula. Availability of suitable tup to date' texts on a mass scale must also be taken into account.[18] (d) Too frequent changes in curricula should be avoided, to allow sufficient time for a particular curriculum to be tested in practice. (e) With caution based on (c) and (d), Indian undergraduate curricula should not only not fall behind by world standards, attempts should be made to pioneer in modernising them.[19]

Pass Curricula

So far, major attention has been paid to undergraduate Honours-

17. As did one university teacher of international-relations recently, who is also a leader of teachers' trade unions, at a symposium on the Bihar struggle of 1974–75. At another symposium in a Delhi college a teacher of economic history maintained that 'Marx was shut out of Delhi University B.A. Economics Honours courses', though, as already noted earlier, the Marxian theory of social revolution has been taught for nearly a decade.

18. Though non-availability must not simply be made an excuse for carrying on with obsolete courses. What could be done is further discussed in the next section.

19. How this might be achieved is discussed in the final section.

level courses. This is partly because in the context of the ideas about specialisation, vocationalisation etc. presented earlier, it is not self-evident that pass-level undergraduate curricula should continue. It is not clear that B.A. Pass courses should continue, except as the equivalent of diploma courses for on-the-job improvement or diversification of qualifications, or to satisfy the thirst for general knowledge among adults on the basis of 'open university' techniques. However, if B.A. Pass courses on conventional lines are to be retained,[20] they must on no account be retained as diluted or truncated versions of the B.A. Honours courses,[21] so that B.A. Pass course students and teachers are, by definition, treated as the less intelligent and less competent members of the tribes of students and educators. They must be specially tailored to provide 'generalist' education or general enlightenment to those who do not wish to become specialists.[22]

Some Implications

Some of the proposals made in the previous section are compatible with prevailing academic practices, or with changes recently proposed. But some are not. A few do's and don't's are listed below:

(i) To ensure standardisation and quality-control over undergraduate curricula, they must be 'text-based', i.e. the topics to be covered in a curriculum must be spelt out, as also the readings or texts (which ought to be modernised from time to time, may be rather more frequently than the modernisation of the curricula themselves).

(ii) The texts should be of international standards and made available at subsidised prices. The implications of this are: (a) editorial boards to select the text should be set up by pioneering uni-

20. E.g. because domestically-inclined women students, who are not heading for professional careers want it, or athletes and sportsmen want it. However, both these categories' special needs could be taken care of by specially designed 'vocational' courses, rather than with conventional B.A. Pass courses.

21. As has been done in the recently revised B.A. Honours syllabus in Political Science in Delhi University, in which the Pass course incorporates some of the papers in the Honours course with identical readings. There is no conceivable rationale for such a procedure.

22. Needless to say, such tailoring is even *more* difficult than drawing up a B.A. Honours Course (just as drawing up a B.A. Honours course is more difficult than drawing up an M.A. course). The reason is simply that, while it is easy to vulgarise knowledge it is extremely difficult to popularise it.

versities[23] consisting of persons who fulfil the necessary condition of eligibility by having made a contribution to the subject which has received international recognition,[24] (b) selected texts should be made available at cheap, subsidised prices (so that they can compete with 'made easy' texts on equal terms as regards prices) (c) specialised, subject-wise journals of undergraduate education should be established whose editors and contributors are drawn *only* from among those who have made some original contribution to the subject which has received international recognition.[25] Such journals must be under compulsion to publish surveys of curricula in the subject abroad and in India from time to time. They must also publish critical surveys and reviews of texts which are recommended, and/or used by students (or teachers), or are intended (by their authors and publishers) to be used, every year.[26]

(iii) It follows directly from the foregoing that: (a) refresher courses for teachers at the undergraduate level must be *compulsorily* organised by the subjectwise 'editorial boards' (and *not* organised optionally and casually on an ad hoc basis, as at present), (b) teachers of undergraduate courses must be compulsorily required to take study leave to attend such refresher courses of at least one year's duration from time to time (say, every five years).[27]

23. Or by national (subject-wise) editorial boards, *provided* the national boards take the trouble to draw up *alternative* curricula with which different universities may experiment.

24. What constitutes 'international recognition' can be suitably defined, though it is not attempted here, for reasons of space.

25. It is perfectly possible to agree on criteria for this, which may differ from subject to subject, but serve the purpose in each case.

26. 'Made easy' texts which are widely used by students must be reviewed in order of importance judged by the size of circulation. The aim should be *both* (a) to detect and publicly pin-point 'errors' and shoddy exposition which they might contain, and (b) to spot genuine talent unrecognised except in the market for 'made easy' books. The present practice of upgrading some of them, and down-grading others, *without* taking the responsibility of assessing them publicly (critically but fairly) should be given up.

27. At present study leave is a privilege (or favour) received by *some* lucky would-be researchers (or wives of researchers !) and not what it should be: a duty based on need to maintain efficiency. The recent proposal to insist on Ph.D. as a qualification for teachers of undergraduate classes leaves this problem completely untouched. Moreover, since non-Ph.D's, if recruited (presumably to fill posts created by the pressure of numbers in undergraduate classes) are to be required to make themselves Ph.D's within five years or lose all further increaments and do Ph.D. work in this too *without* study leave—the main outcome may be dilution of standards of Ph.D. work in this country which are hardly the highest in the world.

(iv) The tutorial system, far from being discontinued, as at present proposed, should be placed on a systematic basis, involving specifically (a) written work, and (b) discussion—undertaken compulsory by teachers, and optionally by students,[28] and the maintenance of formal records by teachers, which are annually reviewed *not* by administrative heads (e.g. College Principals) but by specialists who know the subject.

(v) There is talk of putting an end to the periodic examination system, which is said to be 'beyond repair'. This would be disastrous simply because periodic intensive examination of the students' stored knowledge and acquired skills is necessary for efficiency in any walk of life, in any kind of society.[29] Continuous assessment should certainly *supplement* assessment by periodic examination, but can never *replace* it. Urgent institutional and structural reform of the periodic examination system should concentrate on: (a) a firm *resistance* to the present trend towards relaxation of all quality-control over examiners' work, e.g. by invoking the mechanical rule that examiners should be appointed strictly by rotation according to seniority.[30] (b) an *insistence* on moderation of results (as distinct from moderation of question papers) on the basis of re-examination of scripts by boards of examiners before the results are finally declared,[31] (c) Permitting consultation of texts and personal notes by examinees during exami-

28. The implication is that as long as at least one student in a class wants to make use of the facility, it must be provided by the teacher. Something is better than nothing. There is no ultimate retionale behind the practice of insisting on full (or 'sufficient') attendance at tutorials.

29. No doubt millions of skilled workers, quite a few business magnates, several prime ministers of countries, or a Rabindranath Tagore [but *not* Gandhi], A Mao Tse-tung [but *not* Lenin, who was an excellent examinee]—have acquired this efficiency on a self-taught basis. But why should something which *can* be taught, necessarily be left to be self-taught ?

30. It must be recognised that some teachers are better examiners than others [just as some are better researchers than others], since examining requires some specialised aptitudes and skills. Examiners should be appointed for fixed (renewable) terms by inviting applications, and interviewing candidates. The selection committees for the appointment of examiners at undergraduate examinations must themselves be constituted by professors in the subjects, acting as custodians of standards, taking decisions by majority, or, failing that, by majority vote.

31. This practice was introduced some years back 'in Delhi University' but has been discontinued recently, for unspecified reasons. Actually the boards should be required to re-examine the papers of any examinee who demands re-examination of his scripts after the declaration of results. [At present in Delhi University only re-totalling of marks is permitted after the declaration of results].

nations,[32] (d) replacement of the category of 'failures' by award of fourth division degree.[33] (e) extension of an opportunity (within the limits of administrative concenience) to undergraduate to improve their qualifications by reappearing in examionations.[34]

The numbers seeking admission to undergraduate classes may or may not decline secularly in the coming years. If they do, the proposals put forward above will be easier to implement. If they do *not*, they become all the more urgent, even if implementation becomes more difficult.

32. Examinees *are* allowed to use log-tables. Ph.D. scholars are allowed to consult texts when writing their theses. Most undergraduates in later life consult published work when writing pieces (as journalists, technocrats, administrative staff technocrats, politicians). The capacity to consult and sort, intelligently, is a socially useful skill. On the other hand, an examinee who consults 'made easy questions and answers' in the examination hall is hardly doing anything different from a student who learns the same 'made easy' texts by rote and reproduces their contents from memory. The bitter controversies on this point seem to be controversies on a non-issue.

33. Since the proportions of examinees just above and just below the border-line between those who pass and fail are often large, there is no inherent social gain in making the distinction. On the other hand, the category of 'failures' do manage to acquire some skills (mostly extra-curricular) which deserve to be specified in terms of a fourth division degree, on which the market for skills can put its own valuation (as it does in any case).

34. At present, B.A. Honours students of Delhi University can only 'improve' their results by re-appearing in all papers in each Part of the full course, or in none, barring some freak cases. On the other hand, M.A. students can opt to improve their results in any one paper. There is no good academic rationale for the difference in the rules.

THE INDIAN JOURNAL OF SOCIAL WORK

A Quarterly brought out in April, July, October and January is devoted to the promotion of Professional Social Work, Scientific Interpretation of Social Problems and Advancement of Social Research. The Editor will be glad to consider manuscripts pertaining to Labour Welfare Personnel Management, Industrial Relations, Education, Family and Child Welfare, Medical and Psychiatric Social Work, Mental Hygiene, Criminology, Juvenile Delinquency, Correctional Administration, Social and Moral Hygiene, Physically and Mentally Handicapped, Anthropology, Sociology and Psychology.

	Annual Subscription	Back Issue per copy
India	Rs. 30.00	Rs. 8.00
U.S.A.	$ 8.00	$ 2.25
Other Foreign Countries	£ 3.00	£ 1.00

TATA INSTITUTE OF SOCIAL SCIENCES
Sion-Trombay Road, Deonar, Bombay-400 088

THE EASTERN ANTHROPOLOGIST

In the 28th Year of its publication

Published quarterly by Ethnographic & Folk Culture Society, Lucknow. Includes original papers, shorter notes, Communications and Book Reviews from all fields of Cultural Anthropology.

Annual Subscription:	In India	Rs. 50.00
	In U.K.	£ 5.00
	Elsewhere in the world	$ 14.00

The Eastern Anthropologist
Department of Anthropology
Lucknow University, Lucknow

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

The Teaching of Sociology

RADHIKA RAMASUBBAN

Undergraduate education is generally taken by educational planners as being a preparation for postgraduate and advanced research work. In keeping with this principle, the curriculum is planned in such a manner that the syllabi are elementary and descriptive, leaving a more analytical understanding of the subject matter to the postgraduate curriculum. Hence the syllabi are over-detailed in some respects and gravely incomplete in a more fundamental sense. In a system where only 10% of students go in for a Master's degree, this is questionable. The interests of the overwhelming majority only jeopardised by this elitist bias. The B.A. should be taken as a terminal degree and the syllabi so framed that they are directed to the development of understanding rather than to the accumulation of facts. The student, when he graduates, should be equipped with a complete education, for further specialisation in which he can go in for a postgraduate degree, if he so chooses.

Basic Problems

In dealing with undergraduate education, a host of issues crowd into focus. Next only, if at all, to the lack of teacher-student contact on account of large numbers and the prospect of unemployment, an important question is that of the medium of instruction. The dominant vehicle of communication is still English. While many higher education institutions in the country offer undergraduate programmes in the regional languages, the fact that the choicest opportunities are still the preserve of the English-educated, has not helped the expression of ideas in the

physical and social sciences and professional subjects such as law, medicine, engineering etc., to develop in the regional languages. Whatever books exist in these fields are translations from English texts; everything militates against original expression in the Indian languages. Unable to battle with the unfamiliar language, complete the course in time for the examinations, *and* acquire a grasp over the subject, all at once, the student is ejected from the university system, distorted and maimed by his experience. He is not only devoid of understanding of his subject, but worse, loses his confidence in himself. As mentioned earlier, the syllabi help him to adjust to his new predicament by requiring him to learn facts and not develop an analytical approach to his subject. He becomes adept at memorising what he does not understand. The end result is three-fold. His knowledge of his chosen subject is weak, he is barely literate in the medium of instruction i.e. English, and finally, as he is not permitted to give expression to his creativity in his mother tongue, his growth in that direction is also curtailed.

There is also lack of correlation between the skills taught and the kind of skills required by the employment market; in some cases the total lack of reality about the course taught for example, the case of medical colleges where sensitive students come to realise that they can never practise the skills taught to them in the manner prescribed in text-books, as the 'ideal' situation is totally negated by the overwhelming social reality. Finally, there is also the important question that in a poor society where monomental problems cry out for solution, why is the greatest social asset—manpower, a living, conscious, creative force, dehumanised and rendered surplus and useless?

To take up all or even some of these issues in the scope of this note would make it unwieldy. It would mean raising broader fundamental questions, answers for which must be equally fundamental and must be looked for in an analysis of the socio-economic system and the exigencies of political decision-making. Abstracting from these, we concentrate on undergraduate curriculum[1] with regard to the discipline of which I have personal experience, viz. sociology and the teaching of it. It is also important to note that while on the face of it,

1. The papers offered for the B.A. (Special) course in Bombay University are :— 1. General Sociology 2. Indian Social Institutions and problems 3. Introductory Anthropology 4. Research Methods in Social Sciences 5. Introductory Industrial Sociology, 6. Social Psychology 7. Sociology of Modernisation and Development. A fairly wide and comprehensive array of courses. The manner in which the content is framed and the courses taught, and the type of books prescribed foster a particular 'trend' of education is quite another matter.

a curriculum might appear 'relevant' and meaningful, its effective relevance is a function of the manner in which it is administered to the recipients.

Western Sociology

Before going on to a particular treatment of the curriculum, a few words about sociology itself. The rise of sociology as an independent discipline come about in the nineteenth century. The history of social thought is much older; but a separate science of sociology was promoted by a need to counter the radical and holistic view of economy and society put forward by Karl Marx in the mid-nineteenth century. While economists after Marx turned away from all recognition of the social character of economics, the other side in this decline and fragmentation of social thought was precisely the rise of sociology with 'behaviour' as its focal point of analysis and its abstraction of 'social relationships' from the rest of the underlying socio-economic reality. This has led automatically to a water-tight compartmentalisation of the study of society and hence to a false understanding of the dynamics of this abstraction viz. 'social relationships'. The major preoccupation of this sociology has been (1) the behavioural manifestations of the members of a social group and the characterisation of the group on the basis of these manifestations and (2) a slight variation of the first, the detailed analysis of structural units of a very low level e.g. a family, a community, a formal organisation such as a laboratory, college etc. Seldom, if ever, are these structural units seen as parts of a larger societal entity. Even when such an attempt is made, as for example in the recent spate of books on the modernisation of traditional societies, the legitimacy of the structural arrangement of the larger society is not questioned. The whole is, as such, taken for granted. To quote from Harry Johnson's *Sociology: A Systematic Introduction,* one of the major text-books prescribed for the paper 'General Sociology'—"Sociology is the science that deals with social groups, their internal forms or modes of organisation, the processes that tend to maintain or change these forms of organisation, and the relations between groups....All social problems such as juvenile delinquency, 'racial' discrimination, inadequate housing or education, and war, have to do with the functioning of groups or with the interaction of groups....A social group is a system of social interaction." He makes a distinction between 'groups' and 'social relationships', "A social relationship exists to the extent that two or more individuals, or two or more groups, or individuals and groups to any number of

either, interest with one another. . . . The parties to a social relationship may be friendly or unfriendly; they may co-operate with one another or they may strive to destroy one another. The relationship between opposing armies is a social relationship. . . ." And so on, Johnson goes on to cover the entire B.A. course in General Sociology.

This approach which comprises practically all there is of academic sociology is officially termed the structural-functional model. Being static and a-historical, it is based on value-premises which are wedded to stabilising and maintaining the total social order while studying minute portions of it. In keeping with its commitment to elementarism and institutionalism as the dominant approach to the study of society, social change and conflict are recognised as inevitable, but only of the atomised variety. Tinkering with particular institutions and structures is acceptable as long as one steers clear of and strongly discourages fundamental socio-economic-political upheavals. That racial discrimination and war, for example, are seen in terms of the interaction of "groups", without going into the entire historical and economic basis of racism and of wars, is indicative of the unwillingness of the approach to see 'social problems' in holistic terms and derive a correct understanding of why they exist and how the problems can be solved. But this would immediately necessitate entering into explicitly ideological issues, to avoid which academic sociology came into existence in the first place. Keeping its own value-premises unstated behind the plea of a value-free social science, sociology as described by Johnson has the following characteristics: It is empirical, theoretical, cumulative and non-ethical i.e. "Sociologists do not ask whether particular social actions are good or bad; they seek merely to explain them." That even the role of 'explaining' is a limited one is shown above. This is not the only Sociology which exists, however. Other approaches have developed, based on totally different value-premises such as Marxist sociology. However the dominant and officially-sanctioned approach remains the structural-functional one.

Academic sociology with the ideological bias just elaborated developed in the West as a negative response to Marx's critique of capitalist society, and as an implicit justification of the very social order which Marx made his object of study. With the same value-frame adopted for the teaching of Indian undergraduate students, one can only infer commitment to the same set of value-premises.

To illustrate, the entire paper on Sociology of Modernisation and Development has been lifted from the table of contents of S.N. Eisenstadt's book '*Modernisation: Protest and Change.*' Eisenstadt is an avowed structural-functionalist and his entire model of moderni-

sation is based on the theory that the social, economic and political institutions, values and patterns of behaviour in existence in the advanced Western countries represent the highest level of modernisation. In order to modernise themselves, 'traditional' societies such as those of Asia, Africa and Latin America must progressively emulate the western countries in order to do which they must discard their 'traditional' social structures, values and patterns of behaviour. The institutional arrangement of various social groups characterised as modern is that of an advanced capitalist society. One can only infer from this that progressive integration into the world capitalist system is synonymous with modernisation. Of the five books recommended for the paper in General Sociology, four are by structural-functionalists and so are all four of the authors recommended for the course in Sociology of Modernisation and Development. Of the three Indian authors, at least two subscribe to the same model.

Again, the entire portion of the paper in Sociology of Education, with the exception of two sections on India out of ten, corresponds to the subject matter of a textbook 'Society and Education' by Havighurst and Neugarten. As the authors themselves admit, the book is based on American society and meant for American students. All references in the book are to the institutional patterns prevalent in American society. Another recommended book, 'Sociology of Education' by P.W. Musgrave (the total number officially recommended by the University are four), from whose list of contents two sections have been adopted, is based on the author's experience of British society and all his illustrations are drawn from the same. To what extent teachers are cautious while teaching, in making the students aware of the culture-based character of the subject matter of these books and not to either take what they learn as universal truths or apply it mechanically to the Indian situation, is a matter for conjecture.

The Need for Rival Schools of Thought

In addition to the value-frame of the dominant approach in the discipline itself, what results from the institution of such a course is a mechanical transfer of knowledge to the students by teachers who themselves acquire their knowledge from low-priced American textbooks, some of them recommended by the university. Since all these books are based on the dominant analytical model, there is not sufficient exposure of the students to other schools of thought, except as seen through structural-functional eyes.

For instance, the section on the Revolutionary Process in the paper

in Sociology of Modernisation and Development, has been adopted from a recommended text-book '*A General Introduction to Sociology*' by Guy Rocher. This excellent book devotes exactly three short paragraphs to an exposition of the Marxist theory of revolution. Considering that Marx is the founder and most elaborate exponent of the theory of revolution, the least one can expect is a less cursory and erroneous treatment by authors. Not only does Rocher not define any of the Marxist concepts such as bourgeoisie and proletariate, for example, but states the Marxist theory of revolution as being simply the overthrow of the former by the latter. Incidentaly, in the entire B.A. Sociology syllabus, this single section and a passing reference in the General Sociology paper, are the only mentions made of Marx. What Rocher misses out totally, is the essence of Marx, that he was the first social thinker to provide a scientific law of the historical development of human society through various stages. He provided a methodology for analysing each society on the basis of the stage of development that it has reached, and this stage depends on the level of the development of the productive forces. When the productive forces become developed to a point when they can no longer develop further within the prevailing social framework, a revolutionary change in the social formation becomes inevitable. What Marx did, in other words, was to provide the economic basis of sociology.

Marxist sociology is dismissed by non-Marxist thinkers as being value-charged. But neither is academic sociology value-free. The study of society, if merely descriptive, if not problem and action-oriented, if not directed to the understanding of social problems in order to change the underlying socio-economic reality which causes these problems to exist, is definitely value-charged in the other direction. The natural concomitant of such an approach is social-work, where people are taught to adjust to the existing problems without ever going into the causal basis of these problems. The study of society has no meaning if it does not lead to social action i.e. action to change the underlying socio-economic reality. If the purpose of studying sociology is to change society, then one can adapt it to Indian society, because one would be studying Indian social problems in order to remove the basis of these problems. The uniqueness of Marxist sociology is that it is the only discipline which provides a scientific *methodology* for the study of society; those who see it as merely a set of doctrines are in complete error. To give an example of the difference between academic and Marxist sociology and the absence of an economic basis of the former, the concept of class does not exist in academic sociology except as a statistical concept; those earning a certain level of income are grouped

together. Hence class and group are taken as interchangeable. In the Marxist sense, classes consist of persons who earn their living in a similar manner. Classes are formed by property relations, which in turn derive from the existing mode of production. By using the generic term 'groups' for all social aggregations, one is left with a descriptive social science and no methodology with which to analyse each society in terms of its unique historical development and its economic basis. All this is not to suggest that Sociology be taught to undergraduate students in order to convert them into Marxists. What is being stressed is that the student should be exposed to all schools of thought so that once open and aware, he has an opportunity to form his own opinion in order to take action.

In addition to the recommended text-books being by authors committed to the structural-functional school, given the training of the teachers themselves in this tradition, it is not very likely that the students will be imbued with a critical-analytical approach to the social sciences themselves. A grounding in the history of social thought and social philosophy is not considered as being a necessary acquisition. Following from this is an unquestioning and bored acceptance of the academic sociology doled out through the prescribed textbooks and the lecturer's notes without the students ever subjecting the basic premises of the discipline itself to a thorough and rigorous examination. A suggestion that may be made here is that a compulsory paper be instituted on the History of Social Thought and The Various Approaches to the Study of Society. The paper must explicitly deal with the ideological roots of each approach, and a wide range of books should be recommended.

Teaching Methods

One could argue that a concerned lecturer must use his discretion and encourage the students to read widely. But in practice this does not work out. The examinations always having been the primary consideration, and given the generally prevalent, and not very incorrect belief that examiners prefer students who stick to the officially sanctioned textbooks, students have been socialised in the tradition of one 'safe' textbook. In the case of one which did not include a few of the recommended topics, the missing ones are usually 'left out' for the examination, if supported by the findings of a diligent perusal of the earlier years' examination papers. The inevitable result is that the student is exposed only to the approach of the author of his recommended textbook. Notwithstanding the fact that original books are not

recommended, sometimes, promoted by the wicked price of books and the inability of all students to afford to own one apiece, the lecturer prepares copious notes which he administers to the students. In the delicate world of the social sciences, where each theory and concept has its own ideological moorings, the student merely gets to parrot what he is taught and takes on the colour of his teacher's spectacles. Rarely, very rarely, the teacher may have his own ideological predilections different from the officially sanctioned approach, but more often the teacher has himself internalised unconsciously the values given to him by his educational experience and tackles his subject-matter with the same uncritical approach which he considers normal on the part of his students.

After all in the university examinations what is mostly expected at present are straight answers to straight questions based on the syllabus and not any creative application of the concepts learned, to the Indian situation. The students therefore acquire their B.A. degrees having a knowledge of a 'sociology' which has little relevance to their lives, with no clear perception of Indian society nor any sharp methods or tools for the analysis of the same.

Ideally, the syllabus provides enough scope for innovation and wide reading; however each paper is too vast to be covered in a measured and thorough manner. As mentioned earlier, the details are plentiful while a fundamental basis is lacking.

Teaching is necessarily in the form of lectures rather than seminars or discussions, since members and the low student-teacher ratio precludes all the more democratic teaching methods. There is no practical of field work worth the name except as a euphemism for visits to factories, delinquent homes and prisons, although the student really learns little in qualitative terms about Indian society.[2] On paper the syllabus is vast enough to require a near-neurotic effort to cover the whole. There is little time even for an enlightened and enthusiastic teacher and a responsive batch of students, to see inter-relationships between the different papers, to indulge in the luxury of wide reading, to interact on a more practical and analytical level with the actual social phenomena in order to acquire a more empirical awareness

2. He usually feels vaguely comforted that the sociology of Indian society is really nothing more than the study of caste, marriage, Hindu joint family and tribals. *Prostitution* and beggary, two of the favourite topics, are seen as 'social problems' in themselves. The solution for the former is that there should be more 'homes' for rescued girls. The only reason why the latter exists is that there are 'takers' because there are 'givers'.

than be confined to mere textbook knowledge. There is no time for the students to plan out and execute small research projects and put to test not only the research methods they have learnt but also the illusion they have about social phenomena. As with our entire educational system, one acquires a degree but very little else.

Steps for Action

At this point certain recommendations can be tentatively made.

1. Given the problem mentioned earlier of a limited range of textbooks which prevent the introduction into the curriculum of a critical dimension, there should be workshops of short duration every summer for sociology teachers where they can evaluate (a) the textbooks and reference books they use (b) the manner in which they adapt their teaching of the course (c) debate on current issues in the development of the discipline (d) work out innovations in the curriculum. This task could be taken up by the Indian Council of Social Science Research (which is already organising courses in training in research methods) or by the University Grants Commission. While it is an excellent step in the right direction, to train in research methodology the evaluation of the content of undergraduate syllabi and teaching methods is equally important.

2. One cardinal point which educational planners must give consideration to is to consciously introduce into the undergraduate curriculum a framework consisting of three elements—historical, critical-analytical, and interdisciplinary. The student of sociology is introduced to the paradise of ignorance that he shares with students of other social sciences, that sociology deals with 'social relationships', economics with 'economic processes with as production, consumption, distribution and exchange', and political science with 'political theory and the state'. As mentioned earlier, this compartmentalisation of the social reality is the gravest harm done by the undergraduate curriculum to the intellectual development of the student. A point mentioned at the beginning, that the B.A. must be a complete eduction and give a solid grounding in the discipline must be kept in mind here.

3. Some reforms in terms of streamlining the syllabus and evaluation methods must be made in order to afford the time for a more qualitative handling of the courses, such as field-work or writing of papers calling for more creativity and application of concepts and theories rather than the amalgam of copious notes reproduced from various textbooks which now pass for seminar/tutorial papers.

However, it is not possible to conceive of this without the active

participation and guidance of the teacher. Given his present workload (19 periods a week, usually 15 lectures and 3 to 4 tutorials for Bombay University teachers), it would be humanly impossible to enlist his enthusiastic response to any innovations, unless his burden is considerably reduced and more leisure made available to him in order that he may further his own reading and research interests which would in turn enthuse him to kindle the desire to do research, in his students. A common attitude towards undergraduate teachers is one of condescension, particularly on the part of the *brahmins* of the postgraduate teaching fraternity who, in comparison, enjoy ample leisure, comfortable salaries, access to funding bodies to sponsor their research projects, and acquire visibility by their publications and participation in national seminars which affords them considerable mobility in respect of employment opportunities. That the undergraduate teachers have, most often, no Ph.D. degrees, is used to disqualify them for postgraduate teaching. Their being in the employ of private managements makes it near impossible for them to obtain study leave. Their meagre salary which compels them to look for additional sources of income combined with the factors such as lack of either security of source, housing etc. or intellectual stimuli available to postgraduate teachers create a climate which can hardly be called conducive to pursuing and successfully completing work towards a doctoral degree or adopting new methods and approaches to teaching.

Given the above situation it is not surprising that the lecture-method work as few internal evaluation methods as possible, have proved to be the only means of grappling with the question of teaching and evaluation at the undergraduate level. The most enthusiastic attempts at introducing qualitative changes such as the system of smaller groups, the seminar method, more frequent tests and encouraging students to write more term papers, have invariably back-fire on both students and teachers in the undergraduate colleges, and built into them a resistance to any such innovations.

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Curriculum—A Proposal

BUDDHADEVA BHATTACHARYYA AND JANES PATRANABIS

It is a pre-condition of good undergraduate education that entry to it is limited to the able and the highly motivated. Conditional as delinking the degree with jobs, this may be possible. Further, planning of undergraduate colleges is essential. In recent times, unplanned mushroom growth of colleges has taken place. What percentage of students should be provided with undergraduate education, how the scope of study in various disciplines and faculties can be equitably and reasonably distributed all over the area covered by a university, how much expansion a particular subject needs in consideration of national, or even regional, priorities require to be considered by those who grant affiliations. As at present, universities appear to have no machinery or, perhaps, will to undertake such systematic development. For example, even a village may have two colleges—one providing co-education, the other meant exclusively for girls. Again, both of them may offer scope for studying Honours course in, of all subjects, English, when the percentage of literacy of the area may not be even 20. In West Bengal Statistics is not taught in even 10 out of about 300 colleges! Within an area with a radius of 40 kms. there may not be a single college offering scope for studies in life science! And, so on. Regular inspection of the affiliated undergraduate colleges is a thing of the past.

Secondary Education

The curricular contents of undergraduate education in colleges have

a close relation to that at the secondary level. As the Education Commission (1964-66) rightly suggested, a basic knowledge of languages, humanities, physical and life sciences, and mathematics is essential in the school stage. Lately, in 1974, this has been provided in the curriculum of the Secondary (class X) schools in West Bengal. As for the languages, the three-language formula for all students seems unnecessary. Time and energy consumed for the third language can be gainfully utilised for enhancing proficiency in the first and the second languages. In fact this is most vital. Generally speaking, undergraduate students at present have very little capacity to express themselves correctly in any language and to understand it. This underlines the importance of sound ground work in the languages in schools.

The later stage of the secondary education consisting of the 11th and the 12th class of the new pattern, has to be planned very carefully as these stages mark the beginning of specialisation. Whether both the common general education of the first ten classes and the elementary specialised education of the next two classes should form parts of the secondary education has not been sufficiently thought over, at least in West Bengal, where separate boards of examination for the two stages are visualised.

In respect of the upper secondary stage of education, three points may be made:

(a) More emphasis requires to be laid on languages in all the streams. Two languages (mother tongue and one other language) must be taught; (b) for humanities stream, the curriculum must include Social Science, Indian History and an additional subject from one other stream; and (c) for the Science stream the curriculum should include three subjects of one of the groups (Physical Science, Life Science, Agricultural Science,) one additional subject of one other stream. Elementary practical knowledge linked more with the daily life has also to be incorporated.

Contents of Undergraduate Curriculum

Before we discuss the undergraduate curriculum based on such a secondary education, a general point may be made. At present there is no uniformity in the standards of undergraduate education imparted in the Indian Universities. There are divergences even within a state. Some universities retain their Honours and the Pass courses, some have no Pass course at all. The Government of India incidentally do not even mention an Honours degree as an essential one when outlining qualifications for teachers of colleges. The structure of the under-

graduate education, one would expect, should be uniform throughout the country. This could be along the following lines:

(a) *The Pass Course:* If the Pass course is meant for a general education (streamwise) leading to the first degree required for securing a job, it should be designed accordingly. In that case, utmost emphasis should be laid on languages—mother tongue and another language, preferably English so long it retains its all-India acceptability. Elements of Sociology and Civics should also be other subjects of study. Inter-disciplinary option at least one subject must also be provided.

(b) *The Honours Course:* The Honours Course, on the other hand, should be so designed as to prepare a student for postgraduate studies and research for the purpose of teaching and specialised jobs that he may prefer to opt for. Contemporary vast expansion of knowledge has to be kept in mind in formulating the syllabi.

In subjects involving practical work there exists a wide gap between the contents of theoretical and practical papers. This gap should be narrowed down. Practical work for the science students should be linked with the national and regional realities. Items like soil-testing, elementary electronics, advanced methods of analyses, pisciculture, dairy and poultry techniques etc. require to be incorporated where suitable.

To encourage creative abilities and aptitudes of students, project-work should also be incorporated both in the science and humanities streams.

(c) *Job-orientation:* Too much emphasis on job-orientation is likely to defeat the basic purpose of education or at least dilute it. Rather, adequate arrangements should be made for vocational training for students diverted from university education into other channels at different stages. Again, arrangements for such vocational training must involve a clear idea of regional priorities; the requirements of the rural economy should never be ignored. Cottage industries are still suffering from stagnation on account of their dependence on obsolete age-old techniques. Efforts need be made for their mechanization. But to achieve success in this regard literacy drive should also be simultaneously intensified otherwise these efforts of modernization may not be appreciated.

(d) *Orientation and national environs:* Whenever we speak of orientation and restructuring of our educational system we look forward to what the most advanced nations are doing and aspiring. We seem to forget that we have first to make up for our deficiencies, the legacies of the foreign domination for centuries. True, we have to

accelerate our pace. At the same time we should be realistic enough to recognise that the objective realities obtaining in the highly advanced countries of Europe and America are quite different from those of ours.

The structure of Indian economy is fast changing no doubt. We have been trying hard for industrialization, perhaps reasonably. Cities and industrial belts are fast developing and are thus attracting the rural folk. The villages have not been paid due attention and as a result the rural economy has remained more or less stagnant.

In the light of these considerations the curriculum of undergraduate education should provide for variety and flexibility so that both the urban and the rural needs can be accommodated.

(e) *Participation in community life:* A student should never be isolated from the community. During the vacation, the duration of which is pretty long, the students may be gainfully employed to serve the community—the villages and the towns alike. This will help the students understand their neighbours as also to understand the problems facing them.

Finally, the desirability of introduction of mother tongue as the medium of instruction can hardly be debated. To achieve this end, a lot of ground has to be covered, many hurdles overcome. Initially extensive measures are to be taken for translation of works of international standard. Once this has been done to a considerable extent, original books in regional languages will be coming out. Today the medium of instruction proves a barrier between an inquisitive student and teacher proficient in English. Once the teacher speaks within the classroom the language the student understands and loves, communication will surely be easy and the purpose of education better served.

Journal of Higher Eduaction
Vol. 1 No. 1 Monsoon 1975

The Case for Autonomy

R.V. KAMAT

Plans like College Science Improvement and Humanities and Social Sciences Improvement Programmes (COSIP and COHSIP) of the University Grants Commission have enabled some colleges to improve undergraduate education. But even this has not gone far enough due to the heavy constraints of the affiliating system of our universities under which all our colleges work. The failure of our system of undergraduate education to change with the times, has brought in its wake the problem of flagrant malpractices at the university examinations among both teachers and students. Campus riots and complete disregard for any decent educational values prevail at many places. Many tend to blame this situation on the social, economic and political situation in the country and tend to offer solutions which are political in nature and even go to the extent of opposing the most progressive moves of them all, academic autonomy, on political grounds. One of the oft-repeated *clichés* is to make our education job-oriented and socially relevant—a term never precisely defined, but very confusingly interpreted according to one's own prejudices.

Aims and Objectives of Undergraduate Education

In the earlier system of our education in many states* before the

* The Secondary Education Commission (1953) headed by Dr. Mudaliar, the 3-year higher secondary stage was visualised as a terminal one in modes of the streams of the multipurpose secondary school. This was, however, not implemented widely —Ed.

present 10+2+3 system was thought of, no particular objective was in practice spelled out with regard to achievements and learning outcomes at the end of each stage namely (i) the secondary school (ii) undergraduate education (iii) postgraduate education. The present tendency of requiring a university graduate for almost all jobs except perhaps the lowest paid ones, has confused the issue to a great extent. If the aims of making the school (10) and the higher secondary (2) stages, as terminal stages are filfilled by making the students coming out of these stages elgible for many jobs which at present, though erroneously, demand university graduation, many problems of the undergraduate education will be eased, though perhaps, not completely solved.

One of the greatest problems facing undergraduate education is that of very big numbers, precisely due to this reason A big section of these students entering colleges do so merley to acquire a bachelor's degree of the university without which there seems to be no opening of even an inadequately paid clerical job both in private or public-sector undertaking. Once this requirement of a university degree is waived, the enrolment of students, least interested in the college undergraduate education will fall to a manageable degree. Quite a few of the proposals, I am going to present below, even outside the context of autonomy, will then work to a reasonable degree of success.

A measure of good educational achievement at the undergraduate stage of education would be in terms of definite learning outcomes, which could be assessed by the clear difference in the competence acquired and outlook developed after the student has completed his undergraduate education. If it happens that the student has merely read more books without achieving anything significant such as the qualities of clear independent thinking, ability to analyse and synthesise information received, ability to take mature decisions and the like, then his undergraduate education has given him nothing that he has not learnt already in school, except more factual information. The aim of a good undergraduate education should be to provide that kind of a training which will equip a student to take up any profession be it a scientist, a bank manager or even a police officer where he has to do independent thinking and face new situations.

This brings us to the frequently suggested proposal of making the non-professional undergraduate education job-oriented by introducing job-intensive courses along with others. In the author's opinion this would not solve the problem of making education more useful, and it will turn education into training; by training we mean teaching specific skills to suit a *particular* job like training to operate a machine. The author has no illusions about the sanctity of college and university

education and he does not want to oppose the job-orientation of a non-professional course on this ground. He feels that one does not go far by casually throwing in a few professional courses in a good non-professional undergraduate education. Such students will compare poorly with those from the professional colleges in the job market for specific jobs for which the students in the professional colleges are intensively trained with all the facilities available there. A good undergraduate education should aim not at producing a half-baked poor competitor for professional jobs but a first degree holder with his critical and analytical faculties well developed and sufficiently pliable to be prepared to undergo any kind of pre-job training the employers offer. Having stated our objectives clearly, it is now easy to visualise the means to achieve them. We shall argue that they will be achieved better in the context of academic autonomy. It may not be out of place here to discuss briefly what autonomy means.[1]

The present system of affiliated colleges is a relic of the British colonial past. Nowhere in the world does such a system exist, not even in Britain where it was discarded long ago. All, including those who would rather continue to work in the same system, know the inhibiting nature of this system which curbs all the initiative and drive on the part of a progressive college in regard to innovation in curriculum, methods of teaching and assessment. Autonomy means, in the Indian context, the freedom conferred on a college to plan its own courses and their combinations, give their own examinations which will be held equivalent to any university examination in India. The degrees offered by the college will have the name of a university to which it was previously affiliated. For instance, the degree certificate of an autonomous college 'B' within the jurisdiction of the university 'A' will have the names 'A' and 'B' on it and will be considered equivalent to the corresponding degree conferred by 'A' on a student of the non-autonomous colleges 'C' whose name does *not* appear on the certificate. This is *academic* autonomy as the service conditions of the teachers in the autonomous colleges remain the same as those in the non-autonomous colleges affiliated to the university and will not be adversely affected.

To good colleges, prepared to try new methods in education, academic autonomy would mean a great deal. It will give them freedom, within the desired constraint of maintaining academic standards, to do their own educational planning.

An educational system would be complete only if all the aspects, receive appropriate and balanced emphasis, viz. (1) curriculum (2) methods of instruction and (3) system of examination. We discuss these, both in the present as well as in the future autonomous context.

If one or the other of these are developed intensively to the neglect of others, the objectives will be left unfulfilled, i.e., an imaginative curriculum and innovative method of instruction followed by a reliable system of testing the students with the two-fold aim of getting feedback from the students and grading them for promotion or graduation.[2]

Curriculum

In our present system of affiliated colleges, it is customary to have a syllabus prescribed by the university to be taught in all colleges for a given course. The university board of studies which is usually responsible for spelling out the syllabus is like any official body, hard to move to frequently reassess the syllabus, and to change it if necessary. The result is that, once a syllabus is framed, it is left untouched for years until it becomes outdated and useless, but the colleges are compiled to follow it, as the teachers who teach the syllabus have no power to touch it. Besides, the boards of studies of the universities and the syllabus-making committees are not always the most progressive bodies consisting of the most enlightened among the teachers in the colleges and university departments. Their syllabi are quite often outdated right at birth. Even a good syllabus has to be dynamic in the sense that it needs continuous looking-into and changes from time to time according to the demands of up-to-dateness, relevance, time available and teacher and student interest. Little is possible in these directions with the syllabi prescribed by the university. They tend to remain stagnant over a number of years. The main concern of the teacher then becomes "completing the syllabus" at all costs, to the exclusion of everything else such as new teaching and learning methods in the form of, say, more student participation. These are brushed aside due to 'lack of time'. Even 'extra' lectures are almost a rule everywhere to "complete the syllabus". The prescribed syllabus on which all students in all colleges will take an examination does not allow any freedom on the part of an enterprising teacher in a college to innovate, to try out new teaching methods and to write an imaginative examination.

In autonomous institutions, there is more hope of a truly meaningful curriculum reform in the form of dynamic syllabus. A syllabus or a curriculum is one that the teacher, who gives the course, formulates with the help of his colleagues in the deaprtment, one or more outside experts and may be some good students who have shown interest in their academic pursuits. This syllabus should be subject to scruitiny which should be based on the idea of keeping it up-to-date in its contents, methodology and techniques. The feedback from the students

in the form of answers to the examinations also serves as a reliable guide.

To illustrate what is meant by dynamism in the syllabus with regard to contents, methodology and techniques, we take an example in physics, viz., Electricity and Magnetism, at the degree level. The contents of the course have to be chosen by the teacher through his own knowledge and experience, together with a *good* text-book. This text-book should be supplemented by other suitable reading materials in the form of books[3] and journal articles from, say, *American Journal of Physics* or *Physics Education*. Teaching material for the guidance of students to read the text-books and other reading material cited may be prepared by the teacher. This has proved to be of considerable help to students, especially if they have language difficulties and low discriminative power in choosing reading matter from the references given.

New Teaching Methods

At this stage, an imaginative teacher could, introduce some investigative approaches to the subject. This can be done by asking for alternative approaches to the problems already learned. The students can also be given projects to work on over a long period using additional reference work. This approach has an advantage from the point of view of professional advancement of the teacher as he will have to be on a continuous search for material in new books and in journals, both pedagogical as well as research, and study them himself critically before assigning them to the students. Occasionally, this may lead him to embark on investigations himself with fruitful results to follow. Of course, this will be much more possible if the teacher is given an opportunity to teach at the highest level which means at the post-graduate level at the university and to carry on his personal research.

The most commonly used conventional method of instruction by lectures has its advantages. But it appears to have worked for so long as the *only* method. If however, one of the more important objectives is to activate the thinking process, the lectures fail to do this. Of the many possible alternatives we note two of the most productive. One is the well known method of student participation in the teaching process. At present student seminars are either arranged only at the postgraduate level or, in rare instances, at the undergraduate level as extracurricular activity. They are incorporated in the regular classroom activity at very few places, if at all. The reason are widely stated to be lack of time and its irrelevance for university examinations. It

would be possible to meet them if credits are given and counted for final grading for such an activity. This could be done for internal assessment if it is introduced in the present system. But in an autonomous situation, it would be much more possible to accord formal status to the grades for the seminar participation.

The other method which we discuss is even more dependent on autonomy. This is a system of self-study which goes by the name of Keller plan[4,5,6]. Keller plan is essentially a self-paced self-study method of teaching* (or learning). In this method, the course is taught by dividing it into a number of units of convenient size. Study material to be given to the students as well as a number of tests given at the end of every unit are prepared well in advance by the teacher.

Usually one or more text-books and other references are provided. A student works from the study guide, which states what he should learn and suggests a plan. When the students feels that he can do what he is supposed to be able to do, he asks for a test for which he writes out his answers in the classroom and gets his paper assessed by his tutor (who may or may not be the teacher himself). The standards of passing are set very high. If the student passes the test, he goes to the next unit, if he does not, he goes back to the old unit, straightens out any doubts and difficulties of understanding with his teacher and takes the examination again. Different students in a class are usually at different stages of advancement in the course, but everyone is expected to finish the course, in, say, one term. Finishing the course successfully earns a 'B' for the student. A final comprehensive examination is usually given to merit an 'A'.

The Keller plan has, in practice, been adapted to suit the local condition of shortage of space and personnel. In the Keller plan itself, the actual study is done in the classroom or outside with the teacher present and assisted by a number of tutors who are usually students who have already taken the course successfully. The self-pacing process requires additional tutors. The variation is still the self-study, master-oriented system, but is *not* self-paced. Any self-pacing is done by the students themselves, the brighter requiring less time to learn a unit, while those with lower intellectual abilities require more time; additional time is made up by, say, home study. The requirement is that everyone in the class finishes the study-unit in the same time before a test is taken. The main draw-back of this system, which my colleagues and I adopted in our college, is that if a student fails to clear

* It is also called student-tutored, mastery-oriented instructional plan.

a test, he is still forced to go ahead with the next unit. The result is often that he may not have mastered the previous unit sufficiently well to merit going to the next unit, although he is given an option to take this test on the previous unit again. If he passes the test the second time or even the third time, the results of the previous attempts are ignored in making up the accumulative grades for the final grading.

The student reaction to this was mixed. The better students felt they gained a lot from the process of self-learning. They had to do real hard thinking to cross the hurdles to understanding, which they might not have done otherwise. The less intelligent among them reacted less favourably and tended to drift away. The reasons were not far to seek. They were not used to this method, and were unable to adapt themselves to the new process. A demand for a "lecture" at least to initiate the study of a unit was conceded as a compromise. The fear of having to appear for university examinations and not doing well due to the changed emphasis, weighed on their minds. It is hoped that, in an autonomous college, most such problems would be met more easily.

Evaluation

Improvements in curriculum and methods have to be supported by better evaluation. A good examination will have, as its largest component (about 80%), what is called the objective-type questions, which require fixed responses as against the essay-type questions which are called the 'free-response' questions. The objective type questions include (a) short-answer and (b) multiple-choice types. They are known to have a very high reliability when formulated properly. They can be marked unambiguously due to their "fixed-response" nature. They can, if constructed carefully, emphasise not merely factual learning but also higher skills such as capacity to think, to apply principles to new situations etc.

References

1. Pereira L., *Social Action*, Vol. 24, 213, (1974).
2. Hill Walker H., *Journal of University Education*, Vol. 3, (1964).
3. For instance, Feynman R.P., Leighton R.B. and Sands M., *Feynman Lectures in Physics*, Addison—Wesley. Reading, Mass., (1964).
4. Keller F., *Journ. of Appl. Behavioural Analysis*, Vol. 1, 79, (1968).
5. Green B.A., *American Journ. of Phys.* Vol. 39, 764, (1971).
6. Elton L.R.B., Boud D.J., Juttall J. and Stace B.C., *Chemistry in Britain*, Vol. 9, 164, (1973).

* I wish to thank Rev. L. Pereira, S.J. who read the manuscript and offered comments and criticism.

TEACHER EDUCATION

Quarterly forum for discussions of contemporary problems of teacher education at all levels of professional preparation. Contributions in terms of academic discussions in the field of education, research, book reviews etc. may be sent to the Editor, Teacher Education, 33, Chhatra Marg, Delhi-7. The journal is brought out by Indian Association of Teacher Educators in January, April, July and October. Its annual subscription is Rs. 8/- per year.

INDIA INTERNATIONAL CENTRE QUARTERLY

Each issue of the hundred-page journal contains selected lectures on international and cultural subjects, concepts and ideas in fields like futurology/education/demography and the social sciences, delivered at the Centre, invited contributions from eminent persons and in-depth book reviews by specialists on a variety of subjects.

Published in January, April, July and October each year from 40 Lodi Estate, New Delhi-110003, India.

SUBSCRIPTION RATES

1 year (4 issues)	Rs. 15	Inland
	$ 8	includes
	£ 3	airmail postage
2 years (8 issues)	Rs. 25	
3 years (12 issues)	Rs. 36	
Single Copy	Rs. 4	

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Far From The Main Campus

R.K. YADAV

I propose to make two points regarding improvement of undergraduates education particularly with reference to the weak college away from the main campus.

The Setting

It is in the 4000 odd affiliated/aided/public and mostly "degree" colleges, far away from the main campuses of about 100 universities in India that most of our 3 million undergraduates are taught. And, therefore, one should look at the curriculum and methods of teaching for undergraduates from the point of view of students of these colleges. It is often averred and seldom disputed that rural India is the real India. In a similar vein, one may claim that inclusion of this point of view would lend authenticity to observations and judgements about Indian higher education.

There is a bewildering variety about these colleges in respect of their finances, management, staff, students, physical facilities, and naturally everything dependent upon these. Many of them may have some of the features of the one described below:

> "Krishna Postgraduate College the oldest college in Ramapur is not so old. It came into existence in the early 1960's, when two more classes were added to the Intermediate College which it was. Three years ago M.A. in Sociology was started to entitle the Principal of this "Postgraduate" college to a higher grade. He is the son-in-law of the President of the governing body.

Thanks to the members of the staff who voluntarily contribute a part of their salary to the "Building fund", not only repairs but extensions also would be possible. The teachers look upon the institution as their own. Fourteen in a staff of sixteen belong to the President's caste. Appointments of quite a few of the teachers were confirmed only after years, because they hardly possessed the minimum qualifications. Some of these 'Professors' were teachers formerly in the School Section of the institution and passed their M.A. privately. The college results are not bad; because the members of the staff dictate copious 'notes' and have learnt how to 'guess important questions.' Luckily for them the University paper-setters give 'ample choice' and include the most important questions only to forestall walkouts by examinees. Some teachers have written 'guides' in Hindi, which are so popular that there is not much demand for books from the small college library. In the Intermediate section Science is offered by many students; but for the degree course they have to choose between continuing in this college which has Arts only, or migrating to a far off college. Hostel facilities exist, but most students prefer to stay in private rented rooms and try their hand at cooking by turns. They learn the dignity of labour.

The President is going to add another feather to his cap—opening a B.Ed. class with 350 pupil teachers to begin with. This will further improve the finances of the college. But it will depend upon how soon the present Principal himself obtains his B.Ed. through correspondence course of an Indian University."

Reform of curricula and teaching is often taken up without due consideration to problems and needs of such institutions. Proposals about tutorials, close contacts between the teacher and the taught, aptitude tests and choice of subjects, counselling and guidance, etc. have little relevance. It is pointless to speak about comparable international standards, if there were any.

Broadening the Intellectual Base

Most of all, it is necessary that the staff are enabled to cope with their tasks. Sooner or later as a result of strikes and pressures and student power, if it is found necessary, the college teachers will get justice, i.e. the 'UGC revised grades'. During the next decade or so there will be a sudden demand upon University 'supervisors' and 'guides' for Ph.D. because, to earn increments after a stage a doctorate may be

necessary for these lecturers. Will they do better teaching after doing research? What is the general situation in these colleges, the teachers' age and academic background, their load of work, library facilities, etc.? Teaching is their main job, and should be their *forte*. They will not combine research and teaching, except for two or three years while they are preparing a thesis. Many certainly need to improve their qualifications to deserve the new grades and ensure good teaching. The type of research most of them will do may not bring about even the slightest improvement in the teachers of undergraduates. They will be pouring the old material from vessel to vessel making it, and themselves, turbid in the process.

"Is there a minor poet by others missed,
Dull sermoneer or maudlin novelist,
Some corpse to raise reputation on?
A thesis swallow them and they are gone,
Round greater tombs they mine and countermine."[1]

Introduction of a new Ph.D. or M.Phil. or call it by any other name, should be considered, and this degree may involve no or little research work, but course work based on code reading and some critical or analytical writing, or in existing times, at least 60% marks in a number of Theory Papers at a very advanced level. A comprehensive *viva voce* examination of at least one hour's duration may be compulsory both to test achievement and the capacity to teach. A college teacher of undergraduates should perhaps be requested to obtain such a degree, he may then be spared the Ph.D. steeplechase for increment and promotion. Some other form of certified knowledge conducive to good teaching can be devised. It may be desirable to have short courses and comprehensive *viva voce* for a teacher after every 5 or 10 years. A variety of ways can be examined to achieve the object. "In certain subjects and for certain people research directed towards the presentation of a thesis is not the best form of postgraduate work. In Philosophy and Economics, for instance, discussion central problems at a high level is probably more rewarding to the young graduate than intensive investigation of one problem. We recommend a wide extension of courses of one or two years' duration in which the emphasis is on further study rather than on the preparation of thesis, and which lead to higher degrees or diplomas."[2]

Improved Teaching Methods

The other desired direction of improvement is the curriculum and methods of teaching, because of the much larger and socially

heterogeneous intake of students for university education. Unfortunately, the method of lecturing is popular with the staff even though it is largely concerned with teaching undergraduates whose needs are different. It is surprising how soon after appointment in a college even an old school teacher begins to look down upon blackboard writing, questioning, assignments, etc. as 'school-masterish'. This spoonfeeding, it is argued, is not good for college students. The inadequacy of the preparatory school courses is criticized at the same time. But even in Britain where 'specialisation' is so narrow and early, and the upper secondary courses so exacting, there is an awareness of the need for more formal teaching in higher education.[3]

Teaching of undergraduates in colleges will improve if orientation courses for new teachers are organised. More beneficial than any specific methodology or tricks of the trade in which they may be trained may begin to realise that at present many of their students, especially in the small colleges which draw students of average and below average ability do not derive much benefit from their lectures.

Many college teachers were surprised, even amused, when they first learnt or read about training for Lecturers. How much our students understand or learn is said to be the chief concern of the school masters only. When for young lecturers in universities in USA, UK etc. short orientation courses were run and found useful, scepticism here began to give place to acceptance with reluctance. The Departments of Education in the country, too, have not yet accepted the opportunity with alacrity. It is reported that the emphasis is on the use of technology in higher education, not so much on communication, organisation and division of the subject matter, analysis and explanation, speech and relevant skills. Sometimes there is a mild complaint that this will reduce colleges to institutions of post secondary educations. But history of universities shows teaching has been precisely their most important function. In any case, school leavers who join these colleges would gain if teaching there ceased to be unmethodical.

Notes and References

1. George Pickering : *The Challenge to Education,* Penguin, 1960, p. 70.
2. See Symposium on *Teaching of Social Sciences,* University Press, 1971, p. 23. Also, "Teaching and Research—Happy symbiosis or Hidden Warfare?" by Colin Flood Page in *Universities Quarterly,* Winter 1972, London. "The view seems substantiated that scholarship is a sine qua non of vital and stimulating teaching, but that in some field original investigation is a doubtful requirement for all teachers." See *Contemporary Problems in Higher Education,* H.S. Butcher and Ernest Rudd (Eds) McGraw Hill.
3. Herbert Butterfield: *The Universities and Education Today,* Lindsay Memorial Lectures, University College of Staffordshire, 1961.

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Innovations in Undergraduate Education

J.N. KAPUR

Innovations in education are initiated by individual teachers, by groups of teachers and even by institutions. Innovators in curricula design and teaching methods do not get as much recognition as research workers nor do pedagogic innovations receive as much publicity as academic research work. If the results of scientific research are communicated with the speed of a jet aircraft, those of pedagogic and curricular innovations travel with the speed of a bullock cart. This appears to be one reason for the existence of relatively conservative educational systems in an otherwise dynamic and rapidly innovative world.

The granting of autonomous status to colleges should act as a great break-through for academic innovations in India. Principals and teachers of these colleges should be on the look-out for innovative ideas and practices and should have the courage and discrimination to accept those ideas which appeal to them. Innovative ideas should not be accepted just because they have been successfully tried out abroad, nor should they be simply rejected because these are foreign. In fact many of the ideas described below have originated or have been tried out in Indian institutions. It is only when a large number of our institutions go in for innovations that a truly Indian educational system suited to our needs and genius will develop.

We should not also reject innovative ideas because they may appear to be costly to implement. We have to remember that the argument of 'economy of scale' is in our favour and if we try innovative ideas on a sufficiently large scale, we may have to make large investments

in the beginning, but we may save significantly in the long run. We have to do cost-benefit analysis of each innovative idea for ourselves.

Educational Technology

Films have been mainly used in the past to supplement classroom teaching, but these have been and can also be used to restructure classroom teaching. An undergraduate semester course can be prepared in about thirty one-hour films by the best lecturers available in the country. In fact such a set of films can be prepared by a team of the most talented persons available. The films can supplement a specified text book and can be used in a large number of colleges all over the country.

The lecturers in college will then mainly do tutorials in small groups, remove difficulties of students and discuss assignments. In this system, the students get the best lectures and real interactive tutorials with intimate personal contact with their teachers.

Similarly cassette tapes can be prepared to go along with a given text book. As the student reads the text book he hears an expert commentary on the chapter, pointing out the main ideas of the chapter, and the points which have to be emphasised. The combined audio-visual effect on the student may be much deeper than the single visual effect of reading a text book. This is similar to the effect when some persons want to hear the commentary on a match from an expert while seeing the match themselves. There is however an additional advantage viz. that the student can hear any part of the commentary he wants as many times as he likes.

Programmed learning text books are becoming more and more popular. Here a lesson is broken up into a hundred or more frames. A student reads a frame and then answers questions given at the end of the frame to decide for himself whether he has understood the matter given in the frame. He goes to the next frame only when he has followed the previous frame. In the normal system the student sometimes knows only at the end of a year whether he has followed the lessons or not; in the present system he knows it immediately.

Sometimes a combined use of all these aids is made. Films, videotapes, programmed learning text books, ordinary text books, cassette-tape-records are all stored, almost lesson wise, in a special library. The student goes there and reads a lesson-guide which explains to him which films, cassettes, slides, videotapes etc. to see and hear and in what order. For each lesson, he may spend two or more hours in the library and by means of a computer-administered test or other-

wise, he may be able to judge how much of the lesson he has followed. The student becomes responsible for his own learning and assessment. The teachers spend most of their time in preparing the materials and later in discussion with students. Moreover in this system the student can study whenever he is most motivated to study, may be even at midnight.

Computer-assisted instruction is used in many forms. In mathematics it is used in teaching limiting processes and convergence in calculus and in sciences it is used to carry out simulated experiments on a computer in place of laboratory experiments. Computers are also used in learning of foreign languages and in conducting aptitude tests on a large scale and in developing new learning-examination systems. It has been estimated that for even one thousand students, a break-even position in costs is reached.

A lecturer always wants to get feedback from his students during the course of his lecture. The normal method for him is to 'read' the faces of the students. He can alternatively ask questions, but then the replies can be given only by some students. For this reason, a technological student-response-device has been constructed. During the course of the lecture, the teacher flashes an objective-type question with 4 or 5 alternative answers, on the screen. Each student has four or five buttons on his desk and he presses the button corresponding to the answer which he thinks correct. The teacher gets on a screen in front of him the number of correct responses received. If the students responses show that the class has understood the main point, the lecturer goes ahead, otherwise he repeats the point in some alternative form. The lecturer may ask such questions three or four times in an hour.

One simple innovation is the use of the overhead projector. Here the lecturer instead of writing on the black board writes on a special paper in front of him and this is immediately projected on the screen. The advantages are the following: (i) the teacher has never to turn his back towards the students, which he has to do when he writes on the black board (ii) the projection is in big enough letters which can be read from any part of the lecture hall (iii) the lecturer can prepare the sheets in advance, can project them in the class and simply explain them, thus saving time in writing on black board and also saving a strain on his memory (iv) the lecturer can also project charts, maps etc. and those will be more accurate than what he can draw himself.

The sheets used by the lecturer can be cyclostyled and given to the students. Thus the students have not to spend time in taking down notes and can concentrate only on understanding the lecture.

Sometimes there is a common projection room for half a dozen lecture halls. The lecturer tells the operator there through buttons on a control panel in front of him that he wants a particular slide or film or chart and the operator projects it in his class room. By careful coordination, one operator can serve half a dozen lecture halls.

Participative Education

Here a student designs his own curriculum with the help of a learning advisor or mentor and a directory of learning resources. The resource persons may be professional teachers in colleges and universities or even persons in business or industry who are prepared to teach their specialisation to young persons. The courses may be college courses or on-the-job training programmes.

The emphasis in participative education is on student learning and not on teacher-teaching, on student projects and not on lectures, on students choosing methods and contents rather than on these being prescribed for them, on student assuming the responsibility for learning and teachers being only catalytic agents in the learning process.

An extreme form is provided by the system where no lectures are given but well-equipped libraries and laboratories are provided, teachers are available during office hours for consultation and advice and rooms are available for small-group discussions. Whenever a student feels ready, he can appear in a test.

Use of postgraduate or research students for giving facilities of tutorials to undergraduate students has been found useful. It is cheaper, encourages contacts between junior students and provides useful experience to senior students. In fact study groups of junior and senior students may be formed and they may be encouraged to hold regular conferences and discussions. Committees of students and faculty members to plan academic programmes outside the curriculum may also be useful.

It is highly desirable that every teacher has an office and a small library of his own where he can discuss with his undergraduate students. Provision of office space should be considered a high priority item.

Innovative Approaches to Curriculum

One approach has resulted in a college curriculum based on great books of the Western World, a 54-volume compendium of Western culture containing 443 works by 74 authors from Homer to Freud. Similar courses can be developed for Indian culture and for a composite

human culture.

A second approach is a curriculum based on great problems of current importance e.g. Population Problem, The Problem of Poverty, The Ecological Problem, The Energy Crisis, National Resources etc. Thus for studying the population problem, a student has to study genetics and heredity to understand the biological aspects, he has to study mathematics, statistics and computer science to consider future projections, he has to study economics, sociology and political science to understand the deep interalationship between population growth and social sciences, he may study the growth of populations in the past, he may study various alternative family control measures and so on. For studying any of the big problems of modern life, he needs a rich curriculum and he will be completely motivated throughout.

These are approaches which may be termed as integrative, multi-disciplinary or interdisciplinary wherein individual disciplines are not ends in themselves but are means for learning problem-solving and learning how to learn.

There is an almost opposite tendency based on the concept of flexibility and of unit courses. In this 'cafeteria approach', a student chooses a specified number of unit courses from a large number that are available. These courses are only loosely connected with one another, but a relatively large number of permutations and combinations of these courses is possible so that the student has the option of a number of specialisations and careers. Such a curriculum is rich in breadth but is sometimes poor in depth. This system can allow a great mobility of students, for a student can study some units in one university and some other units in another university. Thus if four or five universities in different regions in India agree on the unit system and further agree to give mutually recognized credits, a student may study in different universities in different regions at different periods and may achieve a national perspective. On a larger scale, such considerations can lead to greater international understanding.

A different approach is based on the axiom that the curriculum should be designed on the basis of students being initiated into research methodology. 'Research approach' is the undergraduate version of the 'discovery approach' at the school level. Students learn through suitably designed research and survey projects. Laboratory experiments aimed at verifying known results are replaced by experiments for exploring open-ended situations. Committing facts to memory has to be replaced by library search and analysis and synthesis of given knowledge.

Yet another approach to curriculum making is provided by the

concepts of the 'sandwich courses' and the 'practice schools'. In the former case the student spends alternate periods in college and industry, while in the latter case, he spends a consolidated period of six months or one year working and learning with an industrial, agricultural or social organisation. Previously these concepts were being applied to engineering and technology students only, but now students of science, social sciences and humanities are also being exposed to such programmes. Another name for this type of education is 'cooperative education.'

Some other curriculum innovations include (a) teaching of social science and humanities to engineering students (b) having common courses for all undergraduates student (arts, science, engineering) at the first year level, common courses for science and engineering students at the second year level, common courses for all engineering disciplines at the third year level and so on (c) masters degrees course in life sciences instead of in botany and zoology separately (d) broad-based B.Sc. degree involving training in physics, chemistry, mathematics, biology and humanities.

Informal and Continuing Education

One per cent of our undergraduate students are studying through correspondence education. It is necessary that lessons are written by the best available persons, that they are printed well, that assignments are corrected regularly and contact programmes at regular intervals are provided for.

In open university, correspondence courses are further supplemented by radio and television programmes. Another feature of this innovation is that undergraduate courses are provided for those who missed the bus earlier and who may not have passed the high school examination even, but who are mature enough to be able to benefit from university level courses.

Another important feature of open university is that it can provide undergraduate course in science and technology through demonstration of experiments on T.V. and through specially designed experimental kits supplied to students to enable them to do experiments in their homes. In India, our laboratories are idle for 16-18 hours a day and we can enable the correspondence course and other part-time students to work there during evenings and nights.

Our college and university buildings are not used normally after five in the afternoon. These can be used to give inservice undergraduate courses and for continuing education classes for adults.

Promoting Innovations

These innovations would require widespread reform of the system of examination and evaluation which is a separate subject by itself. But for promotion of innovations in teaching and curricula, a clearing house for information about innovative practices being tried in undergraduate education in India and abroad is essential. *The Journal of Higher Education* can itself serve the purpose by encouraging publication of report of innovative experiments and even having a separate section for it.

Universities can be encouraged to set up centres for research in higher education which can conduct carefully designed innovative experiments in such a way as to give reliable information with the help of interested members of the faculty. These centres can also conduct training programmes in implementation of innovative practices, in use of educational technology in new curriculum practices and in better methods of assessment. These can conduct short-term courses for fresh college teachers and arrange small group conferences or encounters of faculty members to discuss teaching programmes. These centres can help the teachers to get objective feed-back on their courses by the students and can thus help in improving teaching. These can also advise them in planning and structuring their courses.

Programmes for supporting innovations like College Science Improvement Programme, College Humanities and Social Science Improvement Programme and Autonomous Colleges Programmes should be generously funded. Colleges should be encouraged to submit schemes for innovative practices and those approved should be supported financially. An information bank on all such schemes should be maintained. In general, we need a large and broad based movement for renovating undergraduate education.

References

1. J.N. Kapur, *Current Issues in Higher Education in India,* S. Chand and Co. Delhi, 1975,241 pages.
2. J.N. Kapur, *Current Issues in Higher Education in Various Countries of the World,* S. Chand and Co., Delhi (in Press).
3. A.R. Wight, *Participative Education and the inevitable revolution,* Centre of Research and Education, Colorado.
4. *Report of International Conference on Implications of Mass Higher Education,* Higher Education, Vol. 2. No. 2, May, 1973.
5. *Learning to be,* Report of the International Commission on Education, Unesco and Delhi, Sterling, 1973.

UNIVERSITY AFFAIRS

The all India monthly journal on university education and allied matters

Special/permanent features: World events on Education; Flashes Short news on teachers' movements and important happenings in the country, news regarding All India Federation of University and College Teachers' Organisations (AIFUCTO); Books on higher education;

and

articles on

Educational and examination reforms, teachers' movement, university administration etc. etc.

Annual subscription Rs. 5/- to be sent by M.O. to the Manager, **University Affairs, 4/37 Roop Nagar, Delhi 110007.**

REVIEWS/BOOKS FOR REVIEWS INVITED

NEW FRONTIERS IN EDUCATION

A high class, thought provoking reading material for all the educators in india

Contents of the last issue:

College of Education and Trends in Indian Education—*N.P. Pillai*

Relations between Colleges of Education and Schools—*N. Vedamani Manuel*

An Ideology and Programme for the National Service Scheme—*Anselm Miranda*

Education and Economic Development—*M.V. Bhatawdekar*

Student Health—*D.S. Amar*

Initial Occupational Pattern of Scheduled Caste Graduates in India—*Duncan B. Forrester*

Curricular Innovations in Molecular Biology—The Third Dimensional Biology —*Kunthala Jaya Raman*

How to Run Away from an Educational Problem—*Paul B. Diederich*
etc., etc., etc.

Subscription: Rs. 10/- per year

NEW FRONTIERS IN EDUCATION
4, Raj Niwas Marg,
Delhi-110054

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Fundamental Questions

SURINDAR SURI

Educational reform in India tends to fall between different stools, which indicates that the role and purpose of education in India is not formulated or understood clearly. The current controversy about whether to make education job-oriented is a case in point. There is no clear understanding of what this involves in terms of the intellectual life and intellectual leadership that higher education should generate. Nor is there any serious discussion of the question whether colleges and universities are best fitted to train students in practical activities and arts. Having borrowed and copied the system of education, there is no original educational thinking in India to speak of. Hence discussion takes place in a fog of confusion.

In societies where the educational system has developed indigenously, there is rational understanding of the goals and purposes of different types and levels of education. In times of crisis, a practicable solution can be thought out and implemented. For example,in Germany, a clear distinction is made between universities providing mainly theoretical education and training the intellectual leadership, while the practical disciplines, such as engineering, are left to the *Hochschule* or Institute. Students intending to follow different careers, such as business, accounting, stenography, law, medicine, teaching etc., branch off into different streams at different stages in their educational career. The overall educational system meshes into the socio-economic structure of society. Strains and crises can be analysed systematically and resolved in a socially rational manner.

Education and Alienation

This is by no means to suggest that we should follow the German or any other pattern. Indeed, we cannot think systematically about the educational problems or issues until we have a comprehensive understanding of the total educational situation in India in relation to the socio-economic reality. But the fact of the matter is that we do not know the educational situation in India well-enough. The role and impact of numerous "Anglo-Indian" or Christian private schools, is not known. They educate the children of the elite in expensive, English-oriented environment, producing a goodly share of our parasitic elite. A national system of education does not exist; a national educational policy is therefore not possible. In the absence of adequate information, a purposeful discussion is not easy.

Similarly, there is lack of understanding about what a "job" means in our socio-economic reality. Surely "higher" education, if it is worth the name, should produce creative individuals (at least a modicum of them) who are not headed for pre-existing slots or pigeon holes called jobs. But then the prevailing education in India was introduced, according to the famous 'minute', to produce clerks who would do as they were ordered, and not individuals with initiative who would interact creatively with the social environment and for whom there would be no question and only little difficulty in engaging in socially and culturally creative work. The quest for a job is the negation of engagement with the social and cultural reality. The talk of "job" oriented higher education indicates the intellectual bankruptcy of those who indulge in it. Obviously, the system of higher education is being maintained and expanded by its clerical creatures in position of power. Despite all talk of reform by high-powered committees, no basic reorientation of the system is possible until its political controls undergo transformation.

India, with its vast cultural heritage, however defective in this or that point, nevertheless has an educational system that hankers after the images and ideas of societies far removed from our own. The sociological explanation for this is simple enough. Higher education in India is geared to the needs and interests of sections of the population alienated from the soil. The separation of the ruling dominant elite from the masses is maintained through education which excludes the vast majority and whose benefits elude the common people. The same national genius that devised our caste system is apparently at work in the sphere of education, creating and safeguarding the new caste. Potential misfits and disturbers of the system are

asked to devise proposals for reform.

A fundamental shift in educational philosophy taking place virtually all over the globe is that from Platonic idealism to the existential psychological reality. For instance, the trend in language instruction is away from drilling children in the grammar and idioms of the Queen's English to developing the dialect which is truly the mother tongue of most people. The new approach is evocative: it seeks to develop the slang of the slum or the village to critical self-consciousness, developing the mental capacities of the child from the root. Instructing the child in Queen's English or Sanskritic Hindi handicaps the one who does not come from upper class urban background. Universal mass education is not possible until children of poor families are enabled to develop the linguistic and psychological capacities they acquire in the family and neighbourhood.

Recently, I saw a pathetic instance of imposition of upper class urban images on the rural populace. A professor in Kanpur prepared experimental videotapes for projection to the villages. The goal was to impart the rudiments of scientific knowledge. But stories used to convey the information, and the characters used were far from everyday experience of rural populace. The impact of the videotapes would be to strengthen the belief in the latter that scientific knowledge and the audio-visual gimmickry were preserves of the *Sahibs*, for whom their awe would increase. Indeed, one cannot expect the elite in India to jump over its own shadow, to transcend its self-interest and foster mass education.

Probably it is true that by the time a student from an average social background enters the college, he has despaired of himself, having become alienated from his family, village and his cultural heritage. His "metaphysical" outrage at the psychic wounds inflicted upon him will be expressed in destructive violence. If he succumbs to the system and commits inner suicide, he may be rewarded according to his ability. For instance, at a rather mediocre college in the USA, I once asked a group of students why they were wasting their time studying there. One of the students replied: "Sir, our future employers know that if we can endure four years of this dull and monotonous college, we are fit for employment with them." The spiritual death that an Indian student has to suffer to enter the system is much more excruciating than that suffered by his counterparts in the USA. What a college teaches is not only English Literature, or Economics, Physics, Chemistry, etc; above all, an educational institution socialises the student into its operational structure. He assimilates the values of the hierarchical structure that obtains in every college and university,

learns to endure dullness, boredom, frustration which is necessary for a successful career in a commercial, industrial or bureaucratic society. Unconsciously if not with full awareness he learns how to play the system, manipulating others and allowing himself to be manipulated, sensing where the power lies and how it may be propitiated.

Obviously, there has to be a good prospect of rewards at the conclusion of the educational process in order that students willingly suffer the restructuring of their personalities by the "hidden curriculum." A system, however beneficial or congenial, is willingly accepted only when no alternative is available. Political regimes try to legitimise themselves by proving, with the gun if necessary, that there is no other recourse. A more subtle method is to allow dissent, or attempts at reform, and let rebels and reformers see that they must operate within the system even in order to perform their chosen tasks. However, when the rewards at the successful conclusion of education are uncertain, as they are in India, or when the political regime has not gained full legitimacy, students will not willingly endure the surgical operation that fits them for the industrial society. Constant talk of "job-oriented" education, and crash programmes for creation of jobs for educated unemployed is intended to win acceptance for the system, not to reform it.

It has become a part of our way of doing things that educational reformers enunciate their proposals without concern for their practicability. The inherent rationality of the proposals is supposed somehow to generate a force that would realise them. And there is rarely much awareness of the economic, political and social forces that determine the educational system; the latter cannot be altered in any significant manner without changes in the social context. Reform of curriculum will be insignificant, it may even be counter-productive without alterations in the enveloping structure and the hidden curriculum. But these latter are matters pertaining to the politico-economic relations prevailing in the society. Hence radical or meaningful educational reform is not possible without basic political change or revolution. This is not to say that no change in the educational system is possible unless there is political change. This would be taking too mechanical a view of social reality. The relationship between the educational and the politico-economic systems is dynamic, and changes, however marginal or at best catalytical can be initiated in the educational system.

New Social and Cultural Realities

The point of the foreoging discussion is simply that it would be

naive to discuss basic or far reaching educational reforms without taking into account its dynamic feedback links with the political, economic and cultural reality of the society. Much intellectual energy and innocent idealism has been wasted in our country in adumberating educational reforms without taking into account the extra-educational forces that impinge upon and largely control the educational system. The much-bruited Kothari Commission's report is a case in point. On the other hand, it is worth noting that the various political parties in India, from left to right, have virtually no original ideas on educational reform. All political parties and movements in India are led by persons who are products of the present educational system and have to thank it for their positions of power and influence. They are not overly eager to cut off the branch of the tree on which they occupy their perch. The caste of the English educated elite is a social stratum which those who enter it do not know how to quit: their efforts to pry loose embed them the deeper into it.

World-wide, the trend of educational change is in the direction of earth-consciousness and a new respect for the forces of nature, natural elements. Along-side it is human awareness of the self, of the body—its potentialities and lacks, powers and weaknesses; and above all a deep awareness of finitude: the finiteness of the earth and its resources; finitude of the human intellect; limits of progress; limits to consumption of goods and services. There is a return to the self, away from manipulation of nature and other human beings; away from endless mechanization of all activities. A return to crafts—pottery, wood-working, farming as ways of self-fulfilment rather than non-manual activities such as office work, thinking, intellection. This return is not anti-intellectual or anti-scientific. Experimental science has penetrated too deeply into the life and consciousness of the Western communities for them to return to a life of nature in the sense of a Rousseau. But science is no longer the magic tool that would solve all problems, satisfy all needs, meet all deficiencies—whether those of human behaviour or of natural processes and resources. True, a Gerald Feinberg dreams of a time not too far into the future when human life will become virtually infinite, thanks to genetic engineering and all that. Even if his Promethean utopia becomes a reality, the recognition of human finitude will become all the more imperative.

In other words, among the leading educational thinkers across the globe this is a time of stock-taking, of assessment of the present human condition and the necessity of thinking and finding a way out of the impasse into which mankind is now threatened with imprisonment. The impasse results from the two-fold aggrandizement of a

number of human communities—the aggrandizement of some societies against others (and some classes against others), and the aggrandizement of man against the earth. The two forms of aggrandizement, or imperialism, are interlinked. Both are based upon an attitude of ruthlessness, of rejection of limits in exploiting other humans and exploiting the earth and its resources. Ruthlessness was justified (as it is still in India) as rejection of static and stultifying traditions and traditional constraints upon human behaviour. Undoubtedly, pre-industrial societies in Europe and elsewhere had ossified to a degree where the ideological and politico-military assault of upstart nations became irresistible. Thus, the ending of politico-military imperialism and of ruthless exploitation of the earth do not mean re-establishment of the traditional social orders. But a self-consciously moral and stable social order around the globe is an imperative necessity.

Education must and, indeed, generally does take cognisance of the main historic forces. The search for a new philosophy and method of education in the older societies is indicative of groping for new directions that fit in with the new global trends. The groping will not succeed until the balance of political power shifts globally and in the individual nations. Educationists generally are not in a position to bring about the shift in power. However, some measures are being tried out that loosen the pattern of conventional higher education. This is the significance of the many experiments in higher education that are being tried out in many countries, particularly in the USA. What is perhaps common to the various experimental programme is that the set pattern of class room instruction following syllabi laid down by the authorities are being set aside in favour of learning improvised by each student in consultation with (or even without), a teacher. Initiative in learning, it is maintained, must rest with the learner. Basically, it is he who should decide what he wants to learn, in what manner, and at what tempo.

Initiative and Experimentation in Education

Teachers all around the globe know that some basic initiative rests with the student. Whatever the college may plan or the teacher may attempt, the student cannot be coerced to learn what he does not want to. If he is skilled enough, he can finesse the system by mastering the art of passing the examination. There is a silent match between teacher and student. Now that what the teacher professes does not represent the tide of history, he has almost everywhere lost the battle, but there are as yet no winners. The experiments in education have

generally failed because the society is still governed by the old norms and principles; it is changing but has not changed enough.

One of the educational experiments was tried out by the American Quakers, well-known for their services to society and work in the cause of world peace. Friends World College was started in 1966 on the outskirts of New York City and strove to impart "world education" or global perspective to the student instead of the national perspective that is generally instilled in the students. For this purpose, students were expected to spend six months to a year in different parts of the world, particularly in Asian and African lands. Branches of the college were established in Africa, India, Japan, Latin America. Necessarily, there were no set courses. Nor could one predict the behaviour of an American undergraduate in an African city or an Indian town. It was a pioneering venture, with no lessons from the past to go by, no text books to guide the student. Learning was named "experiential". But this too has its problem. How does one acquire the global perspective, when mankind strewn around the globe is not homogeneous culturally, politically, psychically? To start with a notion of what in global human view point of reality is, and to find it confirmed in societies as different as north American, African, Asian etc., would mean simply that one started with a prejudice and confirmed it during the ambient scholarship.

Other educational experiments have faced similar difficulties. A great Catholic university, Fordham, established an independent experimental unit. It was intended to provide a community of learners including professors and students; in actual practice it turned into a bedlam of *hashish* smoking students who drove out the teachers. Though it is true that the experiments have mostly failed, it is much more important that they were attempted. Some innovations have been adopted by the contentional institutions, e.g. emphasis upon field work. There is an attempt to relate course themes to the contemporary realities. It is recognised, for instance, that economics taught in colleges and universities has little relevance to contemporary national or international economic life. This also goes for many other subjects, including those in the experimental physical sciences, which are divorced from the present crisis of the human environment and related issues.

Educational experiments in Western countries, particularly in the USA and Canada, have highlighted a basic aspect of college and university curricula. Institutionalised education cannot cope with the fast changing social and physical reality; syllabi and courses cannot be shifted to match the changes from year to year. Obviously, then,

the educational system is based on a paradigm—a paradigm that does not reflect the reality in a simple or direct manner, but which helps to organise and order the reality. The paradigm of the old system has lost the capacity to organise social forces, to control and guide the changes. Hence the system and the teachers themselves have lost the legitimacy that they once enjoyed. The new educational paradigms have not been created; hence the confusion and the floundering. Societies often become rigid increasingly ossified as they reach obsolescence. The same seems to hold true of the educational system. Political pressures increase when irremediable tensions within it, freeze the situation even as desperate attempts are made at reform.

The over-all socio-political and educational situation in India is complex indeed. Many reform-minded thinkers have come to recognise it is virtually intractable. Attractions may still be traded at seminars or in print, or there are meaningless changes such as juggling with the number of years to be spent in school. To try a serious reform arouses such a stinging hornets' nest that somehow to swim along the eddying current seems the best policy. When the short-term interests of the dominant elite are served not by altering the system but maintaining its basic defect—the alienation from the masses —how can there be a meaningful discussion? We may only hope that there are individuals and small groups within the system whose vision extends beyond the confines of the silver-plated cage.

It is symptomatic of our situation that colleges in different parts of the country that were offered autonomy in teaching and administration are reluctant to accept the honour. Justifiably, they are wary of becoming objects of the hostility of students which is now diverted to the university. But it also bespeaks of unwillingness to experiment, to take risks and assume responsibility. Above all, it is indicative of the fragile socio-political situation of the country today in which one who dares to trend a new path cannot expect support but must fend for himself. At the same time some of the older "experiments", such as Rural Institutes that were set-up in different parts of the country, fizzled out. Intended originally to produce educated and trained agriculturists, the Institutes have become second class versions of the conventional college. Social forces that would have sustained and carried forward the experiment were not evoked and hence it withered. Even more spectacular and ominous is the failure of institutions such as Visva-Bharati that Rabindranath Tagore visualised as People's University and Gujarat Vidyapith founded under Gandhi's influence. They have been absorbed into the hybrid educational system of India that continues to grow with the rapidity of a weed.

Looking for Solutions

The educational system will at this rate collapse under its own weight. Educationists maintain that it is already nearing paralysis. Allowing the system to expand brings the day of its collapse that much nearer. This undoubtedly is the hidden wish of many educators who dislike the system but see no practicable way of changing it. Growing unemployment among the educated, the impact of price rise on the middle class, and many other factors create unrest. The political system is also caught in a crisis which it is unable to resolve. Hence the day of reckoning cannot be far away, although most wait for it passively in the absence of a clear path of action. Certainly, however, even the most rotten social structure does not collapse until there is a viable alternative; and it is a wise saying that the new is conceived in the womb of the old. In other words, the experience of educators in the present conditions has positive and creative elements that need to be identified and developed. If the main negative character of the present system is its alienation from the masses, from the social and cultural reality of India, the new education will be marked by identification with the masses, the evocation of their energies and ideas. Moves in this direction must be decisive if they are to be meaningful; they must be well thought out and involve a sizeable section of the educational community. Ideas and proposals should come out of discussion among a large number of people, not out of the head of an individual or a coterie.

ARTHA VIJNANA

ARTHA VIJNANA, started in March, 1959, is the quarterly Journal of the Gokhale Institute of Politics and Economics.

The journal publishes, in the main, results of current work by members of the Institute. However, contributions from outside scholars on economics and allied aspects of other social sciences are also welcome.

Enquiries for subscription/Editorial correspondence may be addressed to the Editor, **Artha Vijnana, Gokhale Institute of Politics and Economics, Poona-411004.**

THE INDIAN ECONOMIC AND SOCIAL HISTORY REVIEW

The IESHR is a quarterly journal dealing with a wide range of problems in social and economic history of India and neighbouring countries; it is of interest to three disciplines: history, economics and sociology.

Contributions should be sent to the Managing Editor, Indian Economic and Social History Review, Delhi School of Economics, University Enclave, Delhi-110007.

Subscription and trade enquiries should be addressed to **Vikas Publishing House Private Limited, 5 Darya Ganj, Ansari Road, Delhi-110006.**

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Notes From Research

FINANCIAL CRISIS OF THE UNIVERSITY OF CALCUTTA

The problem of inadequacy of the available resources, for running the University of Calcutta, is being publicly discussed, for some time now. A special UGC Committee has recently gone into the question of reorganisation of the University of Calcutta. In the process, it has gone into certain aspects of the finances of the University.

Taking it as granted, at least, for the sake of argument, that the University of Calcutta is doing a worthwhile job, and doing so, at least, as satisfactorily as any other university in India, how does one proceed to establish that its efforts are being hampered by lack of resources. Once again, it is easier to point out the negative elements, rather than offer wholly satisfactory positive ones. Comparing with the other universities, it is quite obviously wrong. Newer and smaller universities, need relatively much more resources in relation to their output, especially by way of outlays of a capital nature. . One can, however, challenge the wisdom of starting new universities and thereby creating conditions where the older and better organised universities are starved and squeezed. But one cannot compare the relative outlay and effectiveness of expenditure, as between two such universities. Similarly, it is not quite meaningful to divide the expenditure of the university as such, as against the university system as a whole, including the affiliated colleges, by the entire student strength of the undergraduate and postgraduate students. For such comparisons, it would be necessary to add the expenditure of the affiliated colleges, as well as to produce a consolidated expenditure of the entire system.

The near impossible financial situation of the University of Calcutta, can be easily demonstrated without invoking any such doubtful comparison, even though such a process, may involve implicit comparisons of other kinds, but of a less dubious sort.

The actual financial position of the University and the extreme difficulties that it faces in respect of finances, can be very easily brought out, and has been so done, in the three subjoined tables, modified and built up, on the basis of the recent study of the Finances of the University of Calcutta, undertaken by the Department of Commerce, at the instance of the Indian Council of Social Science Research and the University Grants Commission. The tables are reproduced below one after another.

Table 1

ACTUAL AND REAL TERMS RECEIPTS, EXPENDITURES AND DEFICITS*

Year	*Receipts*	*Receipts in constant 1961 Purchasing Power*	*Expenditure*	*Expenditure in constant 1961 Purchasing Power*	*Deficit or Surplus (2) (4)*	*Deficit or Surplus at Constant Price (3) (5)*
1	2	3	4	5	6	7
1948–49	42.57	59.55	45.34	64.24	— 2.77	— 4.69
1951–52	46.92	55.66	48.66	37.44	— 1.74	+ 18.22
1954-55	130.09	192.07	113.15	164.77	+ 16.94	+ 27.30
1957–58	171.57	198.07	171.88	197.70	— 0.31	+ .37
1960 61	210.39	215.33	201.93	206.65	+ 8.46	+ 8.68
1963-64	253.94	242.33	249.98	238.68	+ 3.96	+ 3.65
1966 67	288.40	233.33	315.42	254.64	— 27.02	— 21.31
1969-70	339.82	238.95	344.97	242.48	— 5.15	— 3.53
Accumulated Deficit:					— 7.63	+ 28.69

*Shown as Tri-annual Averages, Centered on the Year Referred to in Column (1): Real Magnitudes being in constant 1961 Rupees, Derived from a specially constructed Index Number of Prices Based on the Calcutta City Middle Class Consumers Price Index and Price Items for certain other essential items like Paper, Books, Ink etc. (In Rupees Lakhs).

Table 2

TRIANNUAL AVERAGE OF ACTUAL AND CONSTANT 1961 RUPEE EXPENDITURE*

Year	*Actual per Capita Expenditure on Postgraduate Students*	*Per Capita Expenditure on Postgraduate Students at constant 1961 prices*	*Actual per Capita Expenditure on Staff (Teaching and non-teaching)*	*Per Capita Expenditure on Teaching and Non-teaching staff at constant 1961 Rupee*
1948–49	929.67	1330.67	3875.33	5401.67
1951–52	1995.55	2341.67	3951.66	4533.17
1954–55	3267.90	4834.25	8075.66	4663.17
1957–58	3048.57	3514.17	11110.00	12907.60
1960–61	2821.33	2888.43	10269.67	10514.81
1963–64	3158.88	3057.28	11368.00	10857.33
1966–67	2798.87	2285.12	13326.20	10762.66
1969–70	2386.97	1658.63	12946.33	9125.00

*Per Postgraduate Student and All Staff, with Part Time Teaching Staff converted to Whole Time Teaching Staff Units on a 2:1 Ratio, Centered on Year Mentioned in Column (1) (Rupees per Annum).

Table 3

NUMBER OF STUDENTS, TEACHING AND NON-TEACHING STAFF*

Year	*Post-graduate Students*	*Teaching Staff*		*Non-teaching Staff*	*Student/ Teacher Ratio*	*Student Staff Ratio*
1948–49	4710	—		—	—	—
1951–52	2656	395	(+199)	834	9.22	3.18
1954–55	3714	489	(+245)	911	10.73	4.07
1957–58	5614	510	(+255)	1018	15.29	5.51
1960–61	7188	718	(+359)	1248	3.31	5.75
1963–64	7008	796	(+428)	1403	13.13	5.63
1966–67	11283	857	(+429)	1508	17.57	7.48
1969–70	14930	967	(+484)	1697	20.76	8.79

*By Tri-annual Average Centered on the years mentioned in column 1.

In getting at a rounded sum of teaching staff, two auxiliary or part time teachers have been considered equivalent to one whole time teacher. Figures in the brackets indicate the part-time and auxiliary teaching staff in whole time staff units.

From the foreoging summary, the problems, including the financial difficulties, being faced by the University of Calcutta will be obvious. The manner in which the University of Calcutta is financed and administered, ensures that the fluctuations in respect of the annual financial figures are comparatively wide: so much so, that annual figures are difficult to use and interpret. By comparison, tri-annual average figures for students, teachers and non-teaching staff are clumsy summaries, without much direct interpretative meaning, introduced primarily to correspond to the financial aggregates. The number of under-graduate students have been entirely left out, but their number, or rather, the number of the undergraduate examinees, have an important bearing on the university finances. The ratio of 2:1 for auxiliary and wholetime teachers is based on the approximate ratio of classes that are normally allotted to them, and does not represent their relative input value, or the ratio of expenditure on them. As a matter of fact, it is a source of some economy for the University and has the net effect of cheapening education.

The tables clearly reveal a near continuous increase in the working load, of both the teaching and non-teaching staff, in the face of a substantial fall in their real incomes from 1957–58 to 1969–70. The fall is of the order of 42.5 percent in fourteen years. This fall in real earnings of the University staff, together with the increase in their work load, is fully reflected in the expenditure for postgraduate students, which, after reaching a peak in 1954–55, falls continuously by as much as 65.8 percent. There is no doubt, that the process had led to an atrophy of creative teaching, exploration and research, which are, by common consent, the most vital elements of the functions of an university, and can brook no kind of objection whatsoever.

The picture that emerges clearly shows that the resources available to the university are not ample or even adequate. Allowing for the income spread between approximately Rs 200 per month to Rs 3000 per month, the mean expenditure of Rs 760.66 per month, and a median expenditure of approximately Rs 507.22 per staff member, cannot be regarded as being excessive, in terms of salary scales obtaining elsewhere, considering particularly, the present level of consumer prices. The study reveals that major financial crisis faced by the University of Calcutta stems from several factors indicated below:

(a) A sharp rise in the student strength from 4710 as a three years average centred on 1948–49, to 14930, similarly centered on 1969–70,

(b) the political impossibility of raising the tuition fees consistently with the sharp price rise.

(c) a very substential rise in the cost of conducting of the undergraduate examinations, leading to the relative decline of the net income from that source, as a percentage of the General Fund of the University, from 45.95 percent for the triannum 1948-49 to 37.48 percent by 1969–70. Receipts and payments in respect of Special Funds consists mostly of investments, including provisions for payment of gratuity, provident fund and pension fund, payments to retired staff etc.

The predicament in which the University of Calcutta finds itself, is also seen, when the undernoted percentage rates of growth over the twenty six years period under study are taken into consideration.

	Estimate of B from log linear fit	*Annual percentage rate of growth*
Number of Teaching Staff	0.236	2.36
Number of Non–Teaching Staff	0.178	1.78
Number of Postgraduate Students	0.420	4.20

Department of Commerce, University of Calcutta **K.A. Mukerji**

PERCEPTIONS OF COLLEGE ENVIRONMENT AND PROFESSIONAL SOCIALIZATION OF MEDICAL STUDENTS*

This study attempted to find out the relationship between perceived medical college environment and professional socialization of medical students. A 100 item medical college environment inventory consisting of 9 scales was used to study the environment. Attitude towards the profession, knowledge acquired as indicated by the examination marks, professional hopes and fears and work–values were taken to constitute the socialization variables. Instruments were developed to measure these variables. Data was collected on 466 fifth year medical students from seven medical colleges distributed all over India. Complete data available from 309 of these students was used for correlational analysis. The results revealed that the perceived college environment does have some significant relationship with the attitude of the students towards their profession, positive professional attitudes being associated with better environment. The perceived college environment was not found related to academic achievement, professional level of aspiration and work–values like academic, creative, independence, rural, security, status, coworkers and work–conditions. However some of the environmental dimensions showed significant negative relationship with economic values and positive relationship with social values. The results from a similar study in Indian industries conducted earlier showed similar patterns. While the results of this study indicate the relationships between perceived college environment and professional socialization variables, it raises questions about the causal relationships between these two sets of variables.

Indian Institute of Management, Ahmedabad **T. Venkateswara Rao**

SELF CONCEPT AND ACHIEVEMENT

Achievement in any activity has been proved to be so complex in nature and origin that successful performance can no longer be assumed for any individual. Research on determining the causes and correlates of achievement in all fields has been ample. The

* This is a summary of the author's doctoral thesis. He acknowledges the help and suggestions made by Professor Udai Pareek of Indian Institute of Management, Ahmedabad.

conclusion arrived at is that the factors cannot be confined to discrete areas such as intelligence or aptitude for they are interrelated. The search for these factors continues. The present study was concerned with one such factor : self concept.

The self concept has already been hypothesized theoretically as a facilitating factor in the act of learning [Payne (6), Fox (2), Jersild (3), Lecky (4), Mukherjee (5), and Brookover (1)]. This relationship has also been tested before, but the population on which these findings were based were invariably limited to small groups of students who came for counselling or to single classes of students. It has not been formulated for the college going population on a wide scale based on an adequate sample. This study attempted to do so.

Those who are enrolled in colleges being less than three percent of the total population of that age group, constitute a group of young men and women who are provided with opportunities which are denied to a majority of their companies. Failure and low achievement among them is undesirable even in highly developed nations, much less so in a developing country. The purpose of this study was to provide information which could help in the solution of this problem of wastage. Hopefully, when it is possible to be selective in admission to higher education, those entering college would be selected on the basis neither of sheer economic capacity as at present nor on the basis of intelligence as a general ability or post-school achievement. Self-concept, if it is seen to be associated with achievement at college will provide a basis for selecting better students.

The study examines the relationship between self concept and achievement for college entrants and the influence of certain variables on the relationship.

The information necessary for the study was obtained by the use of.

1. Ramkumar Q-Sorts Set for measurement of self-concept.
2. Dr. Nafde's Non-verbal Test of Intelligence.
3. A Questionnaire, to gather information about sex, area of residence, community (forward and backward, based on caste) occupation of parents, position in family and size of family.

The sample was selected from a population of 2539 students enrolled for the Pre-degree course (first year of university education) in all colleges situated in one educational district in Kerala. A stratified random sample of 700 was drawn.

Achievement scores were obtained from college records.

Some of the more important findings are as follows:

1. The correlation coefficients between self concept and achievement (.43), self concept and intelligence (.108) and intelligence and achievement (.251) were found to be statistically significant at the .01 level.
2. Differences in self concept were accompanied by differences in self concept and achievement. These differences, on testing were found to be statistically significant.
3. High and low achievers drawn from the sample, could be differentiated on the basis of their self concept scores. The differences on testing were found to be statistically significant.
4. The above results were repeated for groups classified on the basis of sex, area of residence, community, educational level of parents (professional and others), size of family (large and medium, medium and small) and position in family (first and last),

Before attempting to assess the importance of the conclusion arrived at from the study, it is necessary to point out a characteristic quality of the self-concept: i.e. the self concept is amenable to change. Self concept does have a longer stability and stronger consistency than the self. But it is still a learned concept, depending on experiences, and hence it is possible for the concept to undergo change. This change can be accidental or unintentional i.e. can happen without conscious intent. Rogers and his associates (10, 11) have provided empirical evidence to show that the change can also be intentional, conscious. Through the processes of client-centred therapy it becomes possible to change the self

concept in the required direction.

The findings of the present study are important when viewed both from the point of view of theory and application in practice. They have served to confirm the fact that self concept and academic achievement are related positively and significantly for a wide population. It has also been possible to show that though self concept and achievement are related positively and significantly, the relationship between intelligence and self concept is different from the relationship between intelligence and achievement. This finding is the basis for the deduction that, since the effect of intelligence on self concept is related to school achievement, it cannot be assumed that possession of equal intelligence guarantees equal achievement or similar self concept. This deduction was confirmed when it was found that with intelligence kept constant, the sample could be differentiated both on achievement and self concept. The importance of this finding is enhanced when it is added that with intelligence kept constant the differences manifested in self concept and achievement have a direction, i.e. low self concept is associated with low achievement and high self concept with high achievement. The implications of this finding for both psychology and education are important. Self concept becomes an important factor in measurement and prediction of school achievement as well as in explanation of behaviour in other areas.

An important aim of the present study was to find out whether those variables that influence achievement also affect self concept. It was found that the two sets of variables though they included common variables, did not coincide completely.

Self concept has been shown by this study to be a concept that can be changed and measured. Some practical implications could follow such as: (1) Making measurement of self concept a part of the selection procedure for entrance to institutions of higher learning, (2) periodic measurement of self concept students to prevent underachievement, (3) remedial measures for low-achieving students, (4) an active counselling service (5) provision of enriched environment.

Department of Education
University of Kerala, Trivandrum

Vasantha Ramkumar

References

1. Brookover, W.B., A social psychological conception of classroom learning, *School and Society*, 1959, 87
2. Fox, R.S. Importance of Social Environment on School Achievement *Education and Psychology Review*, 1966, 6.1
3. Jersild A.T., *In Search of Self*, New York, Bureau of Publications, Teachers College, Columbia University, 1952.
4. Lecky, P., *Self Consistency: A Theory of Personality*, New York, Island Press, 1945
5. Mukherjee, B.N., Self Perception and achievement motivation, *Journal of Psychological Researches*, 1965, IX.3
6. Payne, D.A., The Dimensions of an Objective Measure of Academic Self Concept, *Journal of Educational Psychology*, 1964.
7. Raimy, V.C., The Self Concept as a Factor in Counselling and Personality Organisation, *Ph.D. thesis*, Ohio State University, 1943.
8. Ramkumar, V., *Self Concept and Achievement*, Radha Publications, 1973.
9. Rogers, C.R., *Client Centred Therapy*, Houghton Mifflin Co. Boston, 1941.
10. Spache, S., in Mackinon, D.L., *Personality*, Annual Review of Psychology, 1949–50

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Communications

RECOMMENDATIONS OF THE UGC PANEL ON TEACHER EDUCATION

The UGC Panel on Teacher Education has made certain recommendations for the development of teacher education during the Fifth Plan Period.[1] They have been circulated as 'guidelines' but have acquired the status of 'directives', as the UGC would, presumably, not consider any proposals for assistance unless they are in accordance with these recommendations. It would not have mattered very much, but for this commitment of the UGC. The document would have been another of those harmless reports produced time and again by various committees at various levels, with pious intentions and vague platitudes, talked about for some time and forgotton thereafter. It is, therefore, necessary for those interested in the development of teacher education to examine it carefully.

Two ideas seem to pervade the recommendations, viz., (i) development of Education as a discipline and (ii) the interdisciplinary approach. Comparatively very little has been said about the programmes specifically for education of teachers.[2] One can also sadly discern a certain lack of respect for Departments of Education in comparison with those of other disciplines.

We attempt to visualise the consequences if all these recommendations are faithfully implemented during the Fifth Plan period and comment on that outcome.

Assessing the Existing Situation

1. There will emerge a report of a survey of the plans and activities of National Council of Teacher Education (NCTE), National Council of Educational Research and Training (NCERT), Indian Council of Social Science Researeh (ICSSR) etc. in the field of

1. *Bulletin of Higher Education*, Vol. 1, No. 1, April 1975 pp. 22–25.
2. This is not surprising, with the composition of the panel being what it is—only one of the 10 members is currently directly involved in teacher education and only three others have been so for some time in their careers, though years ago. It would be more appropriate to call it 'Panel on Education'.

teacher education. This will surely be followed by committees and meetings which will attempt 'to identify the specific role of each of these organisations'.

It will be good to have this clarification. Even the fact of the establishment of the NCTE (which is almost two years old) is not known to teacher educators. With its secretariat in the NCERT, the NCTE is identified with the Department of Teacher Education of NCERT. It should have by now made its impact felt by a clear national policy on teacher education and by clarifying the role of various agencies.* However, it would be very welcome if the UGC could achieve this clarification.

2. We will receive a monograph brought out by the UGC 'on different aspects of teacher education'. This seems to be too ambitious. Its inclusion of information on the pattern of assistance available, undoubtedly, would be very useful. It will also highlight the existing gaps in research on education. This is tricky business. We have had documents giving 'priorities' in research etc. which ultimately turn out to be very general lists. It may thus remain a fruitless exercise. It is better to leave it to the researchers and scholars to decide what they would like to work on.

3. We will get results of a comprehensive study of the objectives and orientation of the B.Ed. and M.Ed. courses. The objectives of B.Ed. do have some clarity. What the panel has said about M.Ed. and its links with B.Ed. and Ph.D. has much truth in it. This study should simultaneously deliberate on the objectives of the intermediary degree M.A. (Education) suggested by the Panel. The three objectives mentioned by the Panel for the M.A. (Ed) viz. (a) course work in basic disciplines (b) training in research methodology and (c) orientation to methods of teaching are evidence of the prevailing confusion in regard to this degree because two of them are at present being achieved by the present B.Ed. and M.Ed. courses taken together. There is need to distinguish between 'education as a discipline' and as a 'profession'. The M.A. (Education) course must be basically different from the M.Ed. courses (with no more than 20% overlap) to justify its institution. In the few universities where both the M.A. and the M.Ed. have been offered for some years, there is a large overlap (75% and more) between the M.A. and the M.Ed. courses.

There are other models, too, for M.A. (Ed.), which deserve consideration. In fact, it would be fulfilling a real need if the whole stream of education as an academic discipline at different levels is clearly devised—at higher secondary level (+2), B.A. (Pass) B.A. (Hons.) M.A. and the Ph.D. levels. It should be possible for the academic community to do so. And, the more we can keep this separate and distinct from school teaching, the better it would be.

If we cannot do this, it is no use frittering away our energies. We should rather devote them in improving the traditional B.Ed. and M.Ed. programmes with provision of suitable electives in them for studying Education as a discipline too.

Inter-disciplinary Study

4. The Panel seems to have one basic assumption while thinking of the development of Education as a discipline, namely, that it can be done only with an interdisciplinary approach. (Ref: Recommendations Nos. 4,7,9,11,13) As a result of these recommendations, (i) teachers and scholars of other disciplines will be teaching in teacher education institutions without a postgraduate degree in education: (ii) postgraduate interdisciplinary seminars will be established on institutional basis, with credit to the students for attending them; (iii) postgraduate courses in subjects other than education will have electives in education and *vice versa;* (iv) faculties and boards of studies in education and in social science departments will have representatives from each other; (v) Ph.D. students will have joint supervisors from different disciplines; and (vi) there will be more units on education in some basic discipline departments.

* It will be profitable to read From the Editors Desk in *Teacher Education*, Vol. VIII, No. 2, January 1974 and *National and State Councils of Teacher Education*, a publication of the Indian Association of Teacher Educators.

It is possible to organise teaching (and this is already done by progressive Heads) by teachers of other departments without the need of any changes in the present regulations. It would be conducive to the development of Education if there were teachers who were interested in Education in addition to their own discipline. And it is possible to acquire a sound knowledge of another discipline without working for a degree in it. But, unfortunately, it would be a rare teacher who would have as deep an insight in Education as in his own discipline, unless he continues to be engaged in its teaching and research. Such individuals should be (and are) always welcome to the teacher education institutions. But, it is not wise to give a blanket opening into teacher education institutions to all those who have not earned a degree in Education. Generally, it would be only those who could not make a mark or could not get a position in their own discipline who would thus find a berth in Education. On the other hand, many teacher educators possess two Master's degrees—one in a basic school subject and another in Education. There are some who, besides a Master's degree in Education, possess one in Psychology; a few in Sociology or Philosophy. A good number of teacher educators is, thus already "interdisciplinary." It is only the nature of work in his institution and his lethargy, which make him become gradually outdated in his basic discipline. The alternative then, is to raise the tone of work so that he continues his interest in his basic subjects.

A Centre of Educational Studies in a new university has had, as a matter of policy, its staff from disciplines other than Education. An appraisal of their experience will be very revealing in this context.

Establishment of postgraduate seminars is a good idea but let it be an out-of-course activity. Good seminars (and lectures, discussions) in any subject even now are attended by students of different departments. It is good to organise more and more of them with teachers of different departments participating in them. All assistance, financial and administrative, may be provided to encourage them. But, introduction of an element of compulsion by giving credit for attending them may defeat their purpose.

5. Introduction of electives pertaining to disciplines other than the one for which a degree will be given is a good way to tap the potential interdisciplinary scholars and to groom them. Incidentally, when such scholars are ready, doors may be opened for them in the discipline in which they offered an elective.

Faculties and Boards in all subjects and not only in Education as recommended would profit by having on them representatives of other departments (not of related social science subjects only). However, the way the Faculties or Boards function, it does not make much difference either way.

In some universities, doctoral students in Education have had joint supervisors-one from an other discipline. (To a much less extent other departments also have involved a teacher educator in the doctoral work of their students related to Education). But joint supervision has its own problems, particularly for the student. The supervisors should shed some of their inhibitions and styles of work and make some extra efforts so that the students get the benefits aimed at by joint supervision.

6. With regard to the establishment of units on education in some basic discipline departments, it would firstly be useful to evaluate the units that were established during the Fourth Plan. It has to be seen whether they have developed their own disciplines or Education or both or either. It is entirely round a suitable scholar, wherever, in education or other disciplines, he be, that a unit should be started. But, as a policy, it is reasonable to have such units in the departments of Education. This may be read in conjunction with a very good suggestion by the Panel i.e. for instance, if a department of Education has its potential strength in Philosophy, it may be assisted to gradually develop a unit in Philosophy of Education.

7. Each university department of Education will develop expertise and excellence in one or two areas as the Panel recommends. This will be of great value for the development of Education in the country. It would, however, not be an easy task to locate the areas of strength in a department.

8. We will have relevant textbooks and materials written, in collaboration, by experts from Education and other departments. Various attempts for getting such textbooks have been made during the last twenty years by various agencies. The textsbooks written have, by and large, been scissors and paste work from foreign books. The main task is to get more and more Indian material available to scholars by more research and suitable documentation. The rest can be left to individual authors and private publishers.

9. The Ph.D. students will be required to advanced course work in the area of their specialisation and methodology of research. If a Ph.D. student has to attend classes and pass courses before he goes about his work, the quality of his thesis will, I am afraid, suffer. By the time he completes his courses, the freshness and spontaneity of the researcher would have gone. It is better to leave it to the supervisor to see to it that the student studies on his own and acquires the requisite advanced level knowledge in his area. We should ultimately accept the fact that the standard of a Ph.D. will always depend on the calibre of the student (and to some extent, that of his supervisor).

Teacher Education ?

Now that the 10+2+3 scheme has been introduced, the panel should do some straight thinking about how the teacher training programmes should be reorganised. The curricula for the first 10 years are already in force. There is an urgent need to devote some sound thought to the +2 stage, which seems to me to be crucial in raising the standards at the university. It has also to be ascertained whether +2 stage teachers will have to have training as a required qualification. It is high time that educators seriously consider the type of teachers needed for the +2 and the corresponding adequate training programmes.

The results of recommendations regarding the introduction of Pedagogy as a subject in postgraduate programmes of the universities will be useful but this needs elaboration.

An uncomfortable feeling remains that there is not much in these recommendations for the development of *teacher education*. One does not grudge the time and thinking devoted to Education as a discipline and to interdisciplinary approach for whatever they are worth. In fact, it is welcome. It should, however, not be at the cost of education of teachers. Some of the burning problems and 'major issues' in teacher education—like proliferation of sub-standard institutions mainly in affiliating universities; raising the standard of the staff at these institutions; outdated syllabi; making programmes more challenging; education of teachers at levels other than secondary; professional degrees offered cheaply through ineffective correspondence courses; physical facilities, libraries, etc.; development of units of science education, language education, commerce education, etc.; need, functions and establishment of schools of education; and such others—deserve consideration by any Panel on Teacher Education.

R.N. Mehrotra

COLLABORATIVE CLASSROOM ASSESSMENT*

Recently, there has been serious thinking about examination reforms. The existing system of examination is being challenged by the forward looking students and teachers as an archaic and unscientific method of assessment. Hundreds of lengthy answers have to be examined in a short period of time; so nobody can honestly ensure that they are objectively assessed. It is needless to emphasise here that this type of assessment has been declared as subjective and arbitrary every where in the world. But we still cling to this method. A great deal of misunderstanding between the students and teachers is due to this single factor of assessment.

It is an excellent idea to introduce internal assessment at every stage of educational process. But assessment done by the teachers alone—and that again a single paper examined by a single teacher—is not likely to create confidence in the students. More-

* The author has been trying this type of assessment in the tutorial classes for the last 15 years or so. Although it is not taken into account in the final university examination yet it serves a very useful purpose as an integral part of teaching learning process.

over, assessment itself should form a part of learning and teaching process. Assessment done by teachers alone confidentially will not serve this purpose by any means. So the possibility of collaborative classroom assessment may be examined with a view to integrate assessment with class room teaching learning process.

The Procedure

A single teacher or a couple of them may assess the answers of a small group of students in presence. A tutorial class consisting of 10 to 12 students may be alright for this purpose. The group will be asked to come prepared with one or several topics of a paper, after they are covered in the general class. All the difficult points raised by the students in tutorial class along with the relevant questions may first be thoroughly discussed. The questions may be drawn from the question bank which should include all possible questions in the subject. After a thorough discussion of all possible questions each of the students may be asked to pick up one or two questions and answer them during a tutorial period. In the next tutorial class each student will be asked to read out his answer in the presence of other students. The students and teacher should discuss the answer in detail with all its plus and minus points. Then all the students and teacher would participate in awarding the grade which the answer deserves. If the teacher disagrees with the students in regard to the exact grade he will offer his reasons before the students. In this process all the 10 to 12 answers may be discussed and assessed. The process will certainly take more time but since it covers several topics of a paper it should take that much which is required to complete the topics in the general class. About 3 to 4 such assessments can be done during an academic session. At the end of the session there might be one comprehensive examination based on multiple-choice objective-type and short answer questions. This type of assessment being very objective and less time consuming, a couple of teachers may be associated in assessing the answers. The final cumulative record card should include all the grades obtained in the tutorial examinations, as well as the final objective type of examination. The grade card may be given to the students in the last week of the academic session and that finishes his assessment for the whole academic session. During the next session he might be given one more chance if he so desires to improve his grade obtained only in the final objective type of test.

Advantages

1. It becomes an integral part of teaching learning process. The students and teachers learn a great deal about each other. All the students learn better in the process as answers to various possible questions are discussed and assessed.
2. There is continuous improvement in the ability of students to comprehend problem and answer questions.
3. Knowledge of one's achievement acquired during the whole session is likely to improve the performance and self confidence of the students.
4. Misunderstanding between the teachers and students in regard to assessment will disappear almost completely.
5. Essay type of examination done in small bits and objective type of testing at the end will ensure assessment of both types of proficiency a student is expected to develop during his academic career.
6. The results are given to the students immediately after the academic session.
7. The university is not burdened with a colossal examination apparatus meant for an external system of examination. The university will get a chance to devote more time for academic planning and development.
8. Collaborative assessment does become internal assessment system in the real sense of the term.

R. Rath

INDIAN JOURNAL OF POLITICS

Vol. IX, No. 1., January-June 1975

The Indian Constitution and the Untouchability Offences Act;
by R. A. SCHERMERHORN.

The Politics of Development;
by ILTIJA H. KHAN.

The Political Economy of Social Transformation;
by H. M. THOMPSON.

Political Productivity and Political Leadership in the New States
by Y. MANSOOR MARICAH.

The Indian Party System Reconsidered
by B. K. JHA etc.

Published by

Department of Political Science
Aligarh Muslim University
Aligarh 202001 India

UNIVERSITY ADMINISTRATION

Vol. 1, No. 2 June-July, 1974

Higher Education in India —A Dimensional Analysis	—	J. L. Azad
Student Protest and Administration Response in Indian Universities	—	Clyde A. Parkar Sally Power N. Y. Reddy
Highlights of Kerala University Bill	—	K. Krishna Pillay
The Open University —A Critical Appraisal	—	N. V. Subba Rao
Changing character of Post-Graduate Education	—	Interview
Challenge and Organisational Response (Short Communications, Book Review, News Digest)		

Editorial and Business Office
OUB/F 34, University Campus, Osmania University
Hyderabad-500007

Journal of Higher Education
Vol. 1 No. 1 Monsoon 1975

Documentation

CURRICULUM DEVELOPMENT IN THE HUMANITIES: ECONOMICS

In February 1974, the Commission constituted Panels in various university disciplines in the Humanities and Social Sciences to advise the Commission on matters relating to the development of teaching and research in their respective areas. Since then, the Panels have met three times and have generally reviewed the undergraduate and postgraduate courses offered at present in the universities and colleges. There is consensus that the courses need to be thoroughly revised and upgraded.

In their meetings held in September–October, 1974, the Panels suggested that regional workshops may be organised at different university centres in the country to suggest measures for upgrading and modernising the syllabus and for bringing it nearer to the needs of the society and students. The Commission has accepted this recommendation and the Panels have started preparatory work for these workshops. A few panels have actually finalised their approach papers and supplementary materials for the consideration of the the workshops. A few others have given broad indications of the pattern of courses which might be developed to replace the present curriculum.

The Panels have suggested the organisation of 36 workshops in various disciplines and at different university centres. It is expected that these workshops will be held from September 1975 to January 1976. An attempt will be made to involve all university teachers who have a decisive say in bringing about changes in university curriculum. It is expected that as a result of the deliberations of the workshops, concrete recommendations and guidelines will be available for developing curriculum in various disciplines. The workshops will indicate measures for relating each specific discipline with social reality of the world in general and our own country in particular. The workshops will also provide guidelines for the preparation of relevant textbooks, supplementary reading materials and teaching aids in each discipline.

Some of the Panels have spelt out the general problems and perspectives of teaching and research in their subjects; final recommendations on these will be made by them when workshops have concluded their deliberations. Some specific points tentatively accepted by the Economics Panel are given below, indicating the nature of the exercises in progress.

UGC Subject Panel on Economics

The Seminar on Teaching of Economics (30–31 December, 1974) decided, at the outset, on the basis of the papers submitted and the considered opinions of those present, to divide the subject into the following broad seven issues:

I. Objectives: the papers revealed two divergent trends regarding the objectives in teaching Economics. One view was that training in Economics should aim at making the mind more receptive and more cultured. Economics, properly taught, would broadly serve the same purpose of liberal education as history or philosophy. The other was that the aim of education in economics should be like that of education in engineering or medicine to turn out professionals who were equipped to practise, i.e. expert-consultants who could advise their clients on how to economise in various activities. These two viewpoints needed to be discussed with reference to the teaching of economics at various stages and in various courses like arts, commerce, engineering, etc.

II. The structure of various economics courses, especially at B.A. and M.A. levels, compulsory and optional papers, and the place of subjects like mathematics, statistics, other allied social sciences and natural sciences;

III. The need for an inter-disciplinary approach, and its; possibility;

IV. The major deficiencies in the teaching of economics at present and the needed remedial measures, including translation of standard British, American and other foreign textbooks into Indian Languages, adding Indian teaching material to them, preparation of original books suited to Indian context; since one can only teach what is known, and some of the above requirements cannot be met by the existing body of knowledge, new directions of research may be essential;

V. Methods of teaching;

VI. Training of Economics teachers in the subject of as well as in the art of teaching; and

VII. Methods of evaluation.

In discussing these issues, the special features of the current Indian educational situation like the average size of the undergraduate and postgraduate classes, the teacher; student ratio, the poor library facilities, the large number of part-time students desiring to finish the courses in the same time as full-time students etc. have to be borne in mind. It is a matter of opinion which of these constraints should be considered as curable, and which should be accepted as parameters. It would, however, facilitate discussion if the assumptions behind the recommendations are made clear.

I. Objectives

Discussions on the objectives were mainly confined to the B.A. (Hons.) and M.A. levels. It was agreed that (i) the main purposes of teaching economics should be to enable students to recognize economic problems and economic aspects of problems and analyze and understand them; (ii) discussion of economic problems should be mainly in the context like the theory of the firm in terms of farm management data; (iii) since the Indian economy is mixed economy, the concepts taught should not only be those which are applicable to the market economy, but also those relevant to the public sector and the planning problems (iv) instructions in economics should not serve the purpose of turning students into apolo ists of *status quo* but make them vigorous constructive critics of the existing socio-economic system. If these aims were realized, Economics would obviously be as much job-oriented as it could safely be made at this stage where persons opting for training in Economics were likely to go in for widely differing jobs. Courses likely to be of special employment benefit like computer programming could be added, where possible. Any part of received economic theories taught well could not achieve this purpose, and the structure and contents of courses become as important as the methods of imparting instructions.

II. Structure of Courses

a) The place of training in Mathematics and Statistics came in for detailed discussion. It was recognized that for professional economists and teachers, a good grasp

of mathematical logic, familiarity with certain branches of mathematics like calculus, set algebra and linear programming and knowledge of statistical techniques generally used in economics were essential, and that therefore these should be properly taught at the B.A. (Hons). and M.A. stages. All of them should not, however, be made compulsory because of various considerations; (i) different types of minds contributed to economic thought and not all of them were at ease in mathematics and statistics; (ii) students came to Economics with different backgrounds; and (iii) students passing with Economics pursued widely differing careers which demanded very different types of training in economics, and when opting for their courses, many of them had no idea of what careers they would follow in future. Very elementary Mathematics and Statistics should, however, be compulsory for all B.A. (Hons.) and M.A. students. There was unanimity that strong courses were needed in the subjects, that the advisability of taking them should be brought home to the students and that as far as possible, the courses should be so arranged that students could make up their deficiencies in them at any stage. It was stressed that most of the courses in both Mathematics and Statistics for Economics students could be advantageously handled by economists so that students could be made to simultaneously realize the need for knowledge of these subjects in economic analysis.

b) Subjects like History, Sociology, Politics, Geography, Philosophy and Psychology were also useful in grasping economic reality. It would, therefore, be inadvisable to insist on student taking all the papers in economics at any stage, and there should be adequate provision for economics students to take these courses both at B.A. and M.A.; along with them, the need for optional papers in Law and Accountancy was also stressed.

c) Institutional Economics or Economic History of India should be a compulsory paper at the B.A. stage.

d) Indian Economics should be treated as issue-oriented at the early stage. Economic aspects of relevant problems like poverty, unemployment, in-equality, etc. should be discussed so as to drive home the application of economic concepts and the idea of relevance.

e) There was a tendency for the B.A. courses in many universities to be heavy. It was, therefore, essential that superfluous models and concepts should be discarded. In this connection, it was emphasised that classical assumption and concepts might be more suited to our needs than the neoclassical ones.

f) It was noticed that there was a great deal of overlapping among different compulsory papers. This should be removed.

g) Regional economics should be introduced as an optional paper at the post-graduate stage, and economic problems of the region at the B.A. (Hons.) stage. There was difference of opinion as to whether the latter could be included as a part of the compulsory paper on Indian economic problems.

h) The Indian Economic Association should lay down detailed guidelines of courses for different subjects in Economics so that University training in these subjects could work towards a common aim.

III. Inter-disciplinary Approach

a) It was recognized that most of the major problems like poverty, controls, black market, etc. demand for their effective solution an integrated approach of more than one discipline, so that problem-oriented research has to be inter-disciplinary. A quick stock taking of inter-disciplinary research and teaching material revealed that there were few satisfactory examples of either.

b) It was recognized that tools and concepts common to different disciplines had not yet been evolved. While efforts in these directions should be encouraged by all possible methods, it was obvious that teaching could not be interdisciplinary at present. Further, at this stage of evolution of Indian universities, there was greater need for strengthening teaching in the discipline rather than making hazarduous experiments in inter-disciplinary teaching.

c) All that, therefore, could be done was to provide strong optional courses and to ensure that training was not completely confined to one discipline only. In this connection, strong courses in more than one discipline, like the PPE courses at Oxford, were specially commended.

d) It was suggested that, as a first beginning, teachers belonging to different disciplines in Social Sciences should be encouraged to informally meet more frequently, and that inputs in inter-disciplinary matters should be increased.

IV. Preparation of Text-books or Translations in Indian Languages

a) At the undergraduate stage, preparation of suitable text-books, work-books, exercises, etc, was recognised as the best method to improve training in Economics.

b) In some courses suitable text-books were available in English or other foreign languages and the only major problem was their translation into Indian languages. But it was thought that text-books written in English were not generally suitable for Indian students who found the language rather difficult; the illustrations were drawn from England or the U.S.A., and these were not suitable in the Indian context. If the major deficiency was illustrations and examples, supplementary Indian materials would meet the needs; if, however, the deficiency was differences in approach, as it was felt to be in many cases, new text-books have to be written in one Indian language or English and suitable translations made in other Indian languages.

c) Suitable text-books normally evolve out of teaching experience over a period. They should ideally be written by good teachers as a result of their experiments in teaching, but it was essential that initially some artificial stimuli should be given. Draft text books so prepared should be tried on students and shown to fellow-teachers before they are published. Writing of good text-books should be recognized as a duty that the teacher owe to the community; in return, the community should recognize that this is as important as a good piece of research, and not impose penalty on text-book writers like their being not appointed as examiners.

d) Supplementary literature is as important as text-books. In addition to the readings in economics that are already available in English, further readings to suit Indian students should be attempted by the Indian Economic Association. It should also bring out select readings from the various economic journals and weeklies and publish journals like American Economist. Booklets furnishing statistical data that every Indian economic student should know should also compiled by the Indian Economic Association.

e) The Indian Economic Association should lend its good offices to bring together Indian authors and publishers. It could also give gist of text-book publications in various Indian languages so as to ensure coordination in this field.

f) Since in the realm of text-books Gresham's law is likely to operate, the U.G.C. should subsidize the publication of good text-books.

V. Teaching Methods

a) It was recognized that the teaching methods had to be suited to the size of the class. When the class was large, the lecture method was the only one suited to it, but it could be supplemented by tutorials, discussions of current topics, project and field work and seminars.

b) Tutorials should be handled by senior teachers, and should be devoted not only to essay-writing and working of exercises, but to formal and informal discussions which would enrich students' understanding of economic theory by furnishing empirical content.

c) Since the only effective tutorials given at present were by tutorial colleges, serious thought should be devoted to the question of whether something could be done to bring the tutorial classes within the university system.

d) Wherever possible, entrance tests to decide the type of students who should be admitted for teaching in Economics should be conducted so that only students with the

necessary aptitude and intelligence take up Economics.

e) Because of the problems involved in large numbers and the fear that persons may only copy out from books, thesis as an alternative for one paper could only be tried on a very selective basis.

f) There is an urgent need for evaluating teachers' performance periodically.

VI. Training of Teachers

A good M.A. course, while not aiming at only preparing students for a teaching career in economics would automatically serve most of their requirements at higher stages. The difficulty in India was that there were a few good M.A. courses, and even if these could be devised in future, there was a large number of teachers already in the field who had not the advantage of sound M.A. training.

b) Refresher Courses should be conducted for teachers in Economics as frequently as in natural sciences. They should be limited to definite aspects so that at the end, the participants did not get a feeling of frustration and confusion. The aim of this Refresher Course should be to teach teachers how to learn for themselves so that there should be no need to go on repeating Refresher Courses for the same participants.

c) It would be good in future to give teachers at an early stage an opportunity to watch the performance of other good teachers and organise detailed discussions of text-books.

d) Teachers could be given opportunities to collectively watch Television programmes in teaching and discuss them critically.

e) In order to keep up with their own interest, teachers should be allowed to build up private libraries which should be heavily subsidised.

VII. Methods of Evaluation

a) Since the major aim of the students was to get a good degree, a proper method of evaluation was the *sine qua non* for the success of all major educational reforms; as otherwise there was a grave danger that learning would follow examinations rather than the reverse. Examinations reform alone could provide a strong motivation for learning economics in the right way.

b) Internal assessment was rightly regarded as creating a proper environment for experiments in teaching, and helping intimate teacher–student relationships with a proper feed back, but the few experiments that were made with it in India had not succeeded. where there were many teaching units as at the undergraduate stage, it was likely to generate into soft options. If the students were opposed to regular work, and especially where there are part–time students or the students somehow feared victimization, the system could not work. Instead of leading to more intimate teacher–student relationship, more unpleasantness developed. It was felt that this experiment should be made only on a selective basis. The system of internal evaluation should, therefore, only from a part of autonomous colleges or select postgraduate departments. In other places, it should be used to test qualities not possible to assess in external examinations. The results should be provided to those employers who asked for them.

c) It may be possible to improve the examination system by suitable questions at the examinations. These should not only test the memory but also the thinking and applications with greater emphasis on the last two. The present impressionistic method of examining questions, testing all three qualities in one, should be given up. Every question should be divided into subquestions meant to perform different functions, and separate marks should be assigned to them, so that the students know what importance was being assigned to different qualities. There should at least be two examiners' meetings to ensure proper standards—the first for deciding preliminarily the system of evaluation, and the second for finalising the norms after the first few papers were gone through.

INDIAN MANAGER

A quarterly journal published under the auspices of the Foundation for Management Education, School of Management, University of Cochin Calcutta-22.

Indian Manager presents authoritative contributions covering a wide range of areas related to management. The main emphasis is on the Indian situation where the need for applying management practices in a systematic manner has never possibly been more acutely felt than in the present critical period of development for the country and on case studies prepared mostly on the basis of on-the-spot observation. There is a section, Book Reviews, which deals with publications of special importance to the management discipline.

INDIAN EDUCATIONAL REVIEW

A Quarterly Journal of Research in Education

The contens of the journal consist of research articles, research notes, book reviews, research abstract materials on new horizons and other feature articles. The areas to be covered by the journal will include sociology of education, economics of education, philosophy and history of education, comparative education, and educational technology, work experience and vocationalization, education in science and humanities, teacher education, educational psychology and such other allied subjects which have relevance to the Indian situation.

Further details may be obtained from **The Editor, Publication Office, National Council of Educational Research and Training, Sri Aurobindo Marg, New Delhi-110016.**

The journal is priced at Rs. 10/- for individuals; Rs. 20/- for institutions.

Blaug, Layard and Woodhall. *'The Causes of Graduate Unemployment'*, London, 1969) are at best, only tangentially concerned with the real socio-political parameters and constraints on manpower and educational planning, Also, overmuch emphasis on economics of education, particularly its links with the production system, tends to minimise its role in transmission of knowledge and skills, meeting individual requirements, its impact on quality of life and equality of opportunity. Keeping in mind the social and political factors one has not only to recognise the tenuous link between education and GNP. One has also to allow for the many operational and other equally significant factors as indicators of the performance of the educational system.

It is possible that the dilemma of educational expansion exposing itself in the form of the glaring contradiction represented by the vast and growing unemployment of highly educated and trained manpower overwhelms judgement on the issues involved. It may generate a belief that educational expansion is running far ahead of the level which can be sustained and supported by the realised level of economic development. An analysis of the occupational and educational structures of the labour force and levels of economic development in a historical setting may also give rise to generalisations about the extent and form of education which a certain level of development may require and/or generate. (The direction of causation may well be indeterminate). However, one, who has gone into the details of the administrative environment, processes, policies and strategies of educational planning in India from the first plan onwards and has attempted to analyse the internal and external demands and pressures behind the phenomena of 'educational inflation', can reasonably be expected to come out with something more than a basically simplistic demand-supply imbalance diagnoses along with specification of socio-political forces behind the imbalance or with the consequent two-pronged policy attack on it. Despite the broad utility of the general prescriptions as also the value of some explicit or implicit specific measures recommended by the author (like the question of link between overall enrolment targets, dominance of private enterprise in higher education and the absence of specific inducive-coercive policy mix etc.), the expectations raised by the author's emphasis on the social and political framework are unfortunately not met adequately by the book.

As the reviewer looks at it, in sketching the model and mechanism of politics of manpower planning (with a good deal of thoroughness in tapping secondary, and primary source material and some reliance on field work), the author has not cared to set up an overall model of socio-political regime in India in terms of and as parts of which politics of manpower and educational planning operates. In the nature of things, specific individual elements of the broad, overall model will have to be called in at specific points to let the analysis proceed (like federalism, parliamentary democracy, and what the author chooses to call a 'free' economy). But a synthesised, general model defining the role, rationale and relative position of various elements as well as displaying the basic logic and common basis of these diverse elements is essential for providing criteria, principles and limiting factors in various choices which the analyst has to make in the course of such an exercise. For want of such a view, a generally electrical standpoint is adopted.

As a result, many questions do not surface or the ramifications of many a question are pursued only upto the boundary set by manpower planning of higher education. As the subtitle of the book suggests, graduate unemployment is a major concern of study. While discussing the issue, the terms of reference are not allowed to extend to the legitimate policy objective of planning for fuller employment. For, otherwise the question must be asked that since education as such does not make people unemployed or unemployable, and in fact, as the author admits though it does not guarantee employment, yet nevertheless, brightens one's prospects of ultimately landing into a job, the policy of merely restricting university education, restructuring secondary education, etc. will not do. Nor is it enough to say that ultimately the long-run solution lies in faster economic development. After all, the solution to the problem of unemployment cannot have a time horizon

longer than the expected working life span, of the unemployed. Formulating the problem in some such form links it up with the question of the rationale and legitimacy of the general path of development adopted in the country. Educational and manpower planning then appears as a sub-set of this broader questions. The market economy framework and its impact on our planning are referred to often enough though its impact on educational planning, especially with a view to release forces which can bring about a long-term transformation of the relevant parameters, is not consciously and explicitly worked out.

Probably, it is owing to this '*tendenz*' that the generally lucid and critical refrain is the general methodological constraints alluded to notwithstanding at times reduced to 'quotemanship'. One question on which quotemanship is more evident is with reference to the practice of educational planning by what the author calls 'totalitarian countries'. Perhaps in certain quarters there still exists a need for showing that a planned pattern of utilization of manpower on the basis of a 'centralised' national economic plan does not involve any more specific, micro level restrictions on educational and occupational choices than are common in any non-anarchic, real economy through a strategic combination of global level inducement coersion policies. The only major difference will be that a planned economy would have a far lower level of misdirection and wastage of human and educational resources than is common in "free" market economics, as is borne out both by theory and empirical evidence.

In sum, the reviewer considers the present study as a significant work which makes its own specific contribution. However, the issues raised are very intricate and despite good insights contained in it, many methodological, theoretical and practical problems arise. These challenging issues, naturally, cannot be, nor perhaps are sought to be, settled through a Ph.D. thesis.

Indian Institute of Public Administration, New Delhi

Kamal Narayan Kabra

The Higher Learning in India—edited by Amrik Singh and Philip G. Altbach. Vikas Publishing House, New Delhi, 1974 Rs. 50. pp. 451+xvii.

Designed as a departure from overly impressionistic to rigorous and critical data-based analysis, these essays on the major problems of Indian higher education have been brought together on the assumption that an understanding of the nature of these problems and the scope of their solution must precede major academic reform. Logically enough, no blueprint of reform is provided. The editors, in fact, disarmingly confess that it is not 'even clear in every case just where to begin.' But they also realise that 'the need for change is evident and the involvement of the academic community in providing both the factual and analytical base for reform, on the one hand, and the impetus for change, on the other, is urgent.' And 'to this goal' they, have dedicated this volume.

Here, at the very outset, lies the rub: not in the dedication, but in the enunciation of the 'goal'. For the enunciation is not based on the kind of rigorous and critical analysis that the editors consider an indispensable preliminary exercise. It rests on the feeling of guilt that some in the academic community have developed owing to their inability to mend matters; and on an axiomatic assumption that those on the scene must bear substantial responsibility for improving it. In its present form, the enunciation is a projection of current ethical norms. This is not to imply that a critical analysis of the issue would absolve the academic community of such a responsibility. That is even theoretically improbable. But scientific scrutiny would view the question of reform in its *totality*. It would hardly justify statements like the one by Amrik Singh on the responsibility of the academic community (even in the limited context of examination reform). 'No one else except those who teach and to some extent those who are taught are responsible for the system as it operates today. That is to say, no agency outside the academic system can even be remotely accused of coming in the way of reform.' (p. 293).

To say *that* is to imply that the pace and extent of academic expansion, wage struc-

ture (inspite of the *declaration* of the revised UGC pay scales), promotion policies, and the hierarchical organisational structure of our academic institutions—all of which affect the quality of the academic community as also consequently, its performance—owe their emergenee and continuance entirely to those who teach. And to say that is to make a rather unfair demand on rigorous and critical analysis, if not also on human credulity.

Didactic self-condemnation may provide pseudopurgation. It is unlikely to produce objectively valid conclusions. The Indian academic scene resembles a whipping top which is whirling with increasing fury. While all are agreed that its movement must be controlled, nobody knows exactly what the whipping mechanism is. Hence the validity of the editors' admission of confusion as to where a beginning is to be made. Hence also the inexplicability of the absence, in this volume, of a separate discussion on the variegated effect of social factors or of the political reality on the academic situation, though the editors are not entirely unaware of these as is evident from the 'Introduction'.

If the present volume is to be assessed within the framework outlined by the editors in their 'Introduction' it must be considered a failure. For hardly a couple of the articles included in it fulfil the basic methodological condition of being based on 'adequate, factual and interpretative research'; the others are impressionistic and general, including the three articles contributed by the two editors.

But the volume should not be so narrowly judged. It contains some very sensitive and intelligent treatment of a number of problems relating to higher education, e.g., the articles by Manindra K. Verma and D.P. Pattanayak, pleading for a phased programme of switch-over to regional languages as media of instruction and retention of English as a link language. Both, Verma in particular, have written with conviction and gusto; a fact which, apart from making their articles readable, also explains the occupational use of attractive but misleading terms like 'mindless *status quo*' and 'dynamic *status quo*'. Outstanding from the point of view of readability is Edward Shils' comprehensive account of the academic profession in India (a reprint from *Minerva* Spring 1969). One even suspects that its stylistic vigour and brilliance would render difficult the detection of bad history that has vitiated Shils' argument. The simplistic binary responses which he assumes were produced by dichotomous forces like renascent Hinduism and occidentophilia may be part of a heuristic model; they never existed in such pure forms in actual history. Also useful are the articles dealing with examinalion reforms: Amrik Singh stressing that examination and instruction are intertwined, and pleading for the introduction of internal assessment without doing away with external assessment; and A. Edwin Harper, Jr. arguing for the adoption of modern educational testing methods without rejecting the traditional system altogether. One wishes, though, that the latter had better control over logic and figures.

For sheer force of argument may be cited A.K.N. Reddy's systematic analysis of brain drain in its global perspective. After an indictment of the public and the private industrial sectors for adhering to foreign collaboration, he suggests that the integration of industry, technology and science into an interdependent complex will create an atmosphere of challenge which alone can 'reduce drastically further brain drain, and even reverse it.' The possibility envisaged by Reddy is further strengthened by the achievements, role and status of scientists in the agricultural universities of Haryana and Panjab, U.P. and Tamilnadu, a theme discussed by Ashok Thapar. It is a pity that Thapar has not cared to analyse the sociology that has contributed to the success of agricultural universities in these four States and to their failure elsewhere.

It is a commentary on the confusing collapse of higher education in India that there is virtual unanimity among the contributors to the volume under review that no major change is likely to take place in the foreseeable future. What is more significant, at a time when the institutional framework is so significant in any social analysis, hope for the Indian academia is sought in 'the indomitability of the human spirit in India' or, which is another way of saying the same thing, in 'those few visionary

individuals working within the academic system'. Human volition, indeed, is an imponderable factor in social development. But even votaries of the freedom and dignity of the individual will perhaps agree that to depend for hope on exceptional individuals rather than, nay inspite of the system is not to advance an overly satisfying prospect. More so as India offers no exception to the universal erosion of human freedom and dignity.

Sudhir Chandra

Citizen in the Making by Surendra K. Gupta. National Publishing House, Delhi, 1975 pp. 302, Bibliography, Appendix, Index. Rs. 55.

Political socialization is a nebulous concept. Its utility for understanding political behaviour has not been established beyond question. The two serious drawbacks in this direction have been its diffuseness and the methodology used to analyse it. Generally speaking, the concept has been used to describe the process whereby a person learns the relevant political role and behaviour in society. However, the process or processes whereby this learning takes place, the role of each of the traditional agencies or socialization, and the effects of individual personality and experiences upon it have not been clarified.

Nor have there been attempts to chart out the different stages through which the learning process called political socialization proceeds. Most students of political socialization have concentrated upon school children and drawn conclusions about the effect either of family or school on the political role and behaviour of children. How far the early influences survive or undergo transformation in the light of subsequent experiences has not been studied.

Gupta's book follows the traditional approach to the study of this subject. It deals with political socialization among the VI to X grade children of one school in Etah district of U.P. The data for the study were compiled through questionnaires from students and teachers and through interviews with the parents. To the readers of the *Journal* this group could have been of interest in highlighting characteristics of the student body which later comes to them.

However, the study, which had been submitted by the author as a Ph.D. dissertation falls far short of this or any similar expectations. If we ignore the chapter 'Theoretical and Methodological Consideration' which is mainly a statistical and content analysis of what has been written earlier, we are left with a detailed description of the school and interview and questionnaire data presented without any clear theoretical focus. Its objectives alternate between presenting a political profile of the children, and examining the role of family and the school in political socialisation.

The book does not add to one's knowledge and understanding of the process of political socialization of school children nor does it make any theoretical contribution. The reader is likely to look in vain for an analysis; the data are certainly there but one still must himself read meaning into them.

Karuna Ahmad

BOOKS AND JOURNALS RECEIVED

The Language Revolution (1974) by Vaasamoorti; Rs. 16.00, M. Seshachalam & Co., Madras.

Issues in Higher Education (1974) by D. Jaganatha Reddy; Rs. 25.00, M. Seshachalam & Co., Madras.

Towards a Cultural Policy (1975) by Satish Sabarwal; Rs. 50.00, Vikas Publishing House P. Ltd., Delhi-110006.

Foundations of Educational Psychology (1974) by Sitaram Jayaswal; Rs. 19.25, Arnold Heinemann Publishers (India) P. Ltd.

Fundamentals of Social Education (1971) by Niranjan Dhar; Rs. 28.00, The Minerva Associates, 7-B Lake Place, Calcutta.

Diffusion of An Interdiscipline by Y.P. Singh; Rs. 30.00, New Hights, X/1024, Darya Ganj, Delhi-6.

Science Policy Studies (1974) edited by A. Rahman & D. Sharma; Rs. 80.00, Somaiya Publishing Pvt. Ltd., Bombay.

Association of Indian Universities 1925-75 by S.S. Bhandarkar; Rs. 50.00, Association of Indian Universities, New Delhi-1.

Alternatives—A Journal of World Policy, edited by Rajni Kothari; Volume I (1975) No. 1, North Holland Publishing Co., and Allied Publishers Pvt. Ltd.

Higher Education in India 1951-71, by J.N. Kaul; Rs. 32.00, Indian Institute of Advanced Study, Simla.

Guide to Indian Periodical Literature, Volume 12, No. 1, Indian Documentation Service, Gurgaon (Haryana).

Our Contributors

Satish Chandra was Professor of History at Rajasthan and Jawaharlal Nehru Universities and is currently heading the University Grants Commission as its Vice-Chairman. His publications include *Parties and Politics at the Mughal Court* (1707-40) and *Political Letters of a Kingmaker at Delhi during 18th century.*

P R Panchamukhi has published papers in the economics of education and heads the research unit on the subject in the Department of Economics, University of Bombay.

R C Mehrotra is a distinguished teacher and researcher in Chemistry, specially Organo-metallic Chemistry and has taken a leading part in improvement of science education and dissemination of science. He is currently Vice-Chancellor, University of Delhi.

D P Pattanayak has interests from literary criticism to anthropology. He specialises in Linguistics and is currently Director, Central Institute of Indian Languages, Mysore.

V V John has taught English literature, administered education as Director of Education and Vice Chancellor, edited the *Quest* and written widely and penetratingly on education. He is Visiting Fellow at the Indian Institute of Advanced Study, Simla.

Arun Bose has published technical papers in economics and heads the Department of Economics, Kirorimal College, University of Delhi. His forthcoming book is *Marxian and Post-Marxian Political Economy: An Introduction.*

Radhika Ramasubban specialises in the sociology of science in which she is completing her doctorate at the University of Bombay. She has taught in colleges in Bombay.

Buddhadeva Bhattacharyya teaches Political Science at Calcutta University and is currently ICSSR Senior Fellow. He has written *The Evolution of Political Philosophy of Gandhi* and *Minor Satyagrahas in West Bengal* (under publication).

Jnanes Patranabis teaches Chemistry at Behala College, Behala, Calcutta and is Joint Secretary, West Bengal College and University Teachers' Association.

R V Kamat heads the Department of Physics and is Vice-Principal at St. Xavier's College, Bombay. He has published research on Electro-dynamics.

R K Yadav specialises in comparative education and is Professor and Dean of the Faculty

of Education, Banaras Hindu University, Varanasi. He has published a book on *The Indian Language Problem.*

J N Kapur is a distinguished teacher and researcher in modern mathematics who has taken particular interest in improvement of school mathematics education and in higher education. After a spell as Vice-Chancellor, he has returned to his Professorship at Indian Institute of Technology, Kanpur.

Surindar Suri a political scientist by training has interests in education and social critique in the broadest sense. He has experimented in education and has published widely including books on *Nazism and Social Change in Germany* and *The Social Psychology of National Socialism.*

Kshiti Mukherji heads the Department of Commerce, Calcutta University.

T Venkateswara Rao is Faculty Member at the Indian Institute of Management, Ahmedabad involved in the Educational Systems Group.

Vasantha Ramkumar teaches in the Department of Education, University of Kerala, Trivandrum. She has published *Self Concept and Achievement.*

R N Mehrotra is Reader in Education at the University of Delhi. He edits *Teacher Education* on behalf of the Indian Association of Teacher Educators of which he has earlier been General Secretary.

Radhanath Rath is a well-known social psychologist heading the Department of Psychology, Utkal University, Bhubaneswar. His latest book is *Psychological Aspects of Social Change.*

K N Kabra has taught economics in Delhi. Currently Reader in Economic Administration, Indian Institute of Public Administration, New Delhi.

Sudhir Chandra teaches history at the Jamia Millia Islamia, New Delhi. He has published *Dependence and Disillusionment : Emergence of National Concsiousness in Late 19th Century* and numerous paper and book reviews.

Karuna Ahmad is a sociologist teaching at the Zakir Hussain Centre of Educational Studies, Jawaharlal Nehru University, New Delhi. Author of many papers in Sociology of Education.

TELUGU

Devoted to the dissemination of modern knowledge through the medium of Telugu, this journal provides teachers and students in particular and elite public in general additional reference material in Telugu and is mainly intended to be a channel for the free flow of scientific information useful to the non-specialist.

Vol. IV, No. 3 July-September, 1975

Neutron Stars and Radio and X-Ray Pulsars,
Telugu plural particles,
The vocal chords,
Limits of economic growth,
Anticipating the sex of the child before birth,
Is India a co-operative federal state ?
Helium, etc. and Book reviews and information.

Annual subscription is Rs. 4/- inclusive of postage.

For copies:

The Director
TELUGU AKADEMI
Hyderabad-29, A.P.

INTERNATIONAL STUDIES

Vol. 14, No. 2 April–June 1975

Japan's Dependence on World Resources and Resources Policy by *P.A. Narasimha Murthy*; Paris Talks on Vietnam and American Diplomacy by *Jaya Krishna Baral*; International Relations as a Communication System by *Jayantanuja Bandyopadhyaya*; New Directions in the Theory of International Relations by *Hedley Bull*; Security Aspects of Non-Alignment by *Anton Bebler*; Dynamics of Student Politics in Nepal, 1961 – 1975 by *Lok Raj Baral*; Book Reviews, Books Received etc.

Edited at the School of International Studies, Jawaharlal Nehru University, New Delhi-110057.

PUBLISHERS AND DISTRIBUTORS VIKAS PUBLISHING HOUSE PRIVATE LIMITED—5 Daryaganj, Ansari Road, Delhi 110006 India.

CONTRIBUTIONS TO INDIAN SOCIOLOGY (New Series)

Vol. 9, No. 1, January-June, 1975

Wiebe and Ramu	Caste and Religion in Urban India: A Case Study.
Raymond Owens and Ashis Nandy	Organizational Growth and Organizational Prticipation: Voluntary Associations in West Bengal City.
Harry W. Blair	Primary and Secondary Characteristics in Peasant Politics at the Micro-level in Indian Constituency: A Statistical Hegira.
Peter J. Claus	Determinants of Household Organization among Tenants and Land owners in the Bant Caste.
Michael Moffatt	Untouchables and the Caste System: A Tamil Case Study.
Anthony T. Carter	Caste 'Boundaries' and the Principle of Kinship Amity: 'A Maratha Caste Purana.
Ludo Rocher	Caste and Occupation in Classical India: The Normative Texts etc.

Published twice a year Edited at the Institute of Economic Growth, University of Delhi, Delhi-7.

Subscription Individuals: Rs. 30 $ 8 £ 3; Institutions: Rs. 40 $ 10 £ 4

Subscription and trade enquiries to

Vikas Publishing House Pvt. Ltd.
5, Daryaganj, Ansari Road, Delhi-110006.

POLITICAL SCIENCE REVIEW

(A Quarterly Journal)

Vol. 13 June-December, 1974

Jawaharlal Nehru and India's Quest Self-Indentity.	
The Union Council of Ministers in India 1952-71: A Study in Elite Composition.	C. P. Bhambhri
Social Bases of Party Support and Political Participation in India	Shri Nagesh Jha
Election and Political Development in West Bengal: A Case Study of the 1972 Elections.	Amal Ray
Anomic situations and Political legitimacy in India.	Shri Ram Mahehswari
Land Reforms in India: A comparative Perspective	Aruna N. Michie
Enforcement of Untouchability Offences Act in India.	Girdhar Behari Sharma
Caste, Class and Politics : An Empirical Profile of Social Stratification in India	Anil Bhatt
Dilemmas and Decisions in India's Language Policy	P.C. Mathur

Subscription Rates (w.e.f. 1.1.75)

Annual - India . Rs. 25.00 (Rs. 10.00 bonafide students only)
U.K. £3.00 U.S.A. $7.30

Book order with : Department of Political Science,
University of Rajasthan, Jaipur.

PUBLICATIONS OF THE UNIVERSITY GRANTS COMMISSION*

(Issued after 1971)

Unpriced Publications

1. Report of the Committee on Governance of Universities and Colleges Part-I. "Governance of Universities", 1971.
2. Principles and Mechanics of the Semester System, 1971.
3. Examination Reform: A Plan of Action, 1973.
4. Recommendations of Zonal Workshops on Examination Reform (A follow-up study of the Plan of Action), 1975.
5. Criteria, Guidelines and Pattern of Assistance to Autonomous Colleges, 1973.
6. UGC Bulletin, Vol. 1 Nos. 1 & 2, 1972.
7. India : Pocket Book of University Education, 1972.
8. Physics in India : Challenges and Opportunities, 1970.
9. Chemistry : Design for Innovation, 1970.
10. Biological Sciences and National Development, 1973.
11. Mathematics in India : Meeting the Challenge, 1974.

Priced Publications**

1. University Development in India, 1970-71	Rs. 18.60	$6.00 Sh. 35
2. Directory of Scientific Research in Indian Universities, 1974	Rs. 35.00	$15.00 £4.00

* Complete list of the Publications can be obtained from the Publication Officer, University Grants Commission, 35, Ferozeshah Road, New Delhi-110001.

** Available on Sale with the Sales Depot, Ministry of Education & Social Welfare, 72, Theatre Communication Building, Connaught Place, New Delhi-110001.

BULLETIN OF HIGHER EDUCATION

Volume I — No. I April 1975

Table of contents

1. Structuring of Courses Relevant for the Rural Environment at the Degree Level
2. College Humanities and Social Sciences Improvement Programme
3. National Service Scheme
4. Recommendations of Zonal Workshops on Autonomous Colleges, Examination Reform and Development of Postgraduate Education in Colleges during Fifth Five Year Plan
5. Area Studies in Indian Universities
6. Support for Research at the Centres of Advanced Study
7. Advance Research Projects in Science sanctioned during Fifth Five Year Plan
8. Advance Research Projects in Humanities and Social Sciences sanctioned during Fifth Five Year Plan.
9. Development of Teacher Education
10. Guidelines for the Development of Correspondence Courses during Fifth Five Year Plan
11. Norms for the Introduction of Postgraduate Courses in the Colleges
12. Reservation for Scheduled Caste and Scheduled Tribe Candidates in the Selections for UGC Research Associateships and Fellowships
13. Assistance under Book Bank Scheme to Colleges having an Enrolment between 250 and 500 students
14. Preparation of University Level Books by Indian Authors

The Bulletin is issued thrice a year. Comments and discussion of policies and programmes outlined in the bulletin are welcome for publication in the columns of the Journal of Higher Education.

Copies of the Bulletin are available from:

Publication Officer
University Grants Commission
35, Ferozeshah Road
New Delhi-1

IN FORTHCOMING ISSUES

FOCUS ON EQUALITY—WITH SPECIAL FEATURES ON WOMEN, SCHEDULE CASTES AND TRIBES; SYMPOSIA ON POSTGRADUATE EDUCATION, ON THE Ph.D. AND ON THE STRUCTURE OF LEARNING IN INDIA; STUDIES ON ALIGARH, THE REGIONAL DIMENSION, EUROPEAN UNIVERSITY 1790-1938, THE ENVIRONMENT OF HIGHER LEARNING IN INDIA.

REVIEWS ON TOWARDS A CULTURAL POLICY (SATISH SABHARWAL), THE COMING OF POST-INDUSTRIAL SOCIETY (DANIEL BELL), SCIENCE IN INDIA (A. RAHMAN AND K.D. SHARMA), DIFFUSION OF AN INTERDISCIPLINE (Y.P. SINGH), EDUCATION, EQUALITY AND OPPORTUNITY (BOUDON) ETC.

JOURNAL OF HIGHER EDUCATION

Vol. 4 No. 3 Spring 1979

JHE

Editorial Board

Professor Satish Chandra
Chairman, UGC
Professor Rais Ahmed
Professor S. Manzoor Alam
Professor J.B. Chitambar
Professor M.S. Gore
Professor Tapas Majumdar
Professor M.V. Mathur
Professor R.C. Mehrotra
Professor B. Ramachandra Rao
Vice-Chairman, UGC
Professor R. Rath
Professor M. Santappa
Professor H.L. Sharma
Professor R.S. Sharma
Professor S. Shukla
Honorary Editor
Assistant Editor
Shri Prem Varma

© University Grants Commission
New Delhi

Printed and published by R. K. Chhabra, Secretary, University Grants Commission, New Delhi-2. Documentation and Technical production: V. Appa Rao, Publication Officer, University Grants Commission. Printers: Indraprastha Press (CBT), Nehru House, New Delhi-110 002.

JOURNAL OF HIGHER EDUCATION

Vol. 4 No. 3 Spring 1979

UNIVERSITY GRANTS COMMISSION
NEW DELHI

The *Journal of Higher Education* is published by the University Grants Commission to promote discussion of contemporary problems and policies in, as well as scholarly study of higher education.

Views expressed in all contributions are those of the authors. The Commission or the *Journal* are not committed to them.

Contributions in duplicate typescript and books for review (2 copies) may be addressed to the Honorary Editor.

All editorial enquiries may be addressed to the Assistant Editor, *Journal of Higher Education*, University Grants Commission, 35-Ferozeshah Road, New Delhi-110 001.

The *Journal* is issued thrice a year: Monsoon, Autumn and Spring.

Subscribers to the *Journal* will also receive a copy of the *Bulletin of Higher Education* published by the Commission thrice a year. The *Bulletin* carries official information from the University Grants Commission.

Rates of subscription for the *Journal* are as follows: Annual Rs. 20 (India), £ 3 or $ 8 (Foreign): Single copy Rs. 8 (India), £ 1 or $ 3 (Foreign). For bona fide individual teachers and students in india, Rs. 10 per annum.

Enquiries regarding subscription may be addressed to the Assistant Education Officer, Publication Sales Depot, Ministry of Education and Social Welfare, 511 C Wing, Shastri Bhavan, New Delhi-110 001.

CONTENTS

Revolt, Activism and Apathy: Reflections on Socio-Political Expectations of Students in India	*Anil Baran Ray*	... 301
A Study of the Image of Indian Journals on Management and Social Sciences in the International Academic Community	*Anand S. Dhawle and Amitabha Ghose*	... 313
Reorientation of Geological Education	*I.C. Pande*	... 327
On Implementation of a Mastery Learning Strategy	*Rajeshwar N. Mathur*	... 333
Continuing and Non-formal Education: Universities' Introduction With and Contribution to Continuing Education	*M.N. Palsane*	... 343
University Education and Rural Development	*K.G. Gurumurthy*	... 353
University and Emerging Educational Technologies for Adult and Continuing Education	*R. Jayagopal*	... 365
Linkage of Higher Education with Environment	*G. Subramania Pillay*	... 373

Notes From Research

A Study of Personality Syndromes and Cognitive Characteristics of Scheduled Castes, Backward Classes and Non-Scheduled Castes Students	*L.P. Gupta*	... 381
A Study of Scientific Attitude of College Teachers	*S. Jaleel Saheb and S. Sathiyagirirajan*	... 387
An Analysis of Question Bank in Mathematics	*M.L. Sisodia, V. Natarajan and G.C. Patni*	... 392
Which Do They Want: IA or TS ? A Comparative Study	*A. Venkata Rami Reddy and G. Prathapa Simha*	... 400

Communications

Moderation of Examination Results	*V. Natarajan and Ved Prakash*	... 407
Evaluation of Performance of Candidates at Post-graduate Examinations	*T. Srinivasaraghavan*	... 410
Semester Pattern and Internal Assessment System in Agricultural Universities in India—A Critical Review	*G. H. Sankara Reddi and T. Lohi Das*	... 413
The Management of a Department of Studies in a Unitary University	*D.C. Joshi*	... 417

Book Reviews

Interdisciplinarity: papers presented at the SRHE European Symposium on Interdisciplinary Courses in European Education. SRHE Occasional Publications	*Mukul Dube*	... 423
Resource Allocation on Education—An Inter, Intra-country and Inter-Tomporal Pattern Analysis by G.D. Sharma	*V.N. Kothari*	... 426
Who Goes to College? by Vimal P. Shah and Tara Patel	*Malavika Karlekar*	... 427

Books and Journals Received

Our Contributors

Journal of Higher Education
Vol. 4 No. 3 Spring 1979

Revolt, Activism and Apathy : Reflections on Socio-Political Expectations of Students in India

ANIL BARAN RAY

In India today few subjects have been of more compelling public concern than indiscipline among college and university students. The pervasiveness of the problem created by students in India has been well summarised by Philip G. Altbach:

> Student unrest has been one of India's most serious educational and political problems. Students have paralyzed colleges and universities and have caused serious damage to public facilities as well as to educational institutions. Hardly a week goes by without an outbreak of student "indiscipline" in some part of India; student problems are discussed by such diverse groups as police officials, the Prime Minister, the Cabinet, and educational authorities.[1]

While there have been too many explanations of student unrest in India, there has not been much analysis of the problem from the perspective of students—their expectations from the political and the educational systems. This paper makes an attempt in that direction. For purposes of analysis, I have classified students into three categories: (a) militant Naxalites, who reject the existing 'system' and advocate its overthrow by armed revolution; (b) moderate activists,[2] who take part in strikes and agitations but do not advocate the overthrow of the government as the Naxalites do; (c) apoliticals, who despite their mental dissatisfaction with the existing condition of things, do not take part in agitations. Before I discuss in detail the reaction of these three types to the present system—political and educational—it would not be out of place to say a few words about the radical change that, in course of time, has come upon the 'culture' of students in India.

The change in the 'culture' of students from what it was before to what it

is now has a significant impact on the phenomena of student unrest in India. "Intellectual pursuit is the only duty of a student", preached the ancient *rishis* (sages) of India. In those days, serious-minded students used to stay in the *ashrams* (hermitages) of their *gurus* (professors), completely cut off from their parents and homes, living the life of hermits and devoting all their energies to the pursuit of learning. The acquiring of knowledge was then an end in itself. That was the ideal of the ancient India. With the passage of time the deviation from this ideal set in and with the coming of the British, India took to western education. Schools and colleges took the place of *ashrams*. The structural modernization was fine and it was also inevitable. But such modernization brought in its wake an important change in the attitude towards education. The education became utilitarian and instrumental. The major purpose of the student population during the British regime was to get jobs of a clerical nature under the British. The highest ambition of the best among students was to be recruited to the Indian Civil Service or the ICS. This type of mentality continued after independence and perhaps it would not be an exaggeration to say that the replacement of academic culture (the pursuit of knowledge for its own sake) by the vocational culture (a degree somehow for a better job) has become the permanent feature of the Indian educational system today.

Another "hangover" from the colonial period is the student participation in the political life of the country. The society in general enthusiastically approved of such participation by students in the pre-independence period. The participation of students in politics in the pre-independence period, in the language of Edward Shils, was "legitimated" by the authority of the elders—parents, teachers and national leaders.[3] This point needs some elaboration and a little delving into history in order to show how the politicization of students started, what role they played in the politics of freedom movement and how the attitude of society and of elders especially changed from one of approval of student political participation in the pre-independence period to one of total disapproval in the post-independence period.

Since the Indian students had to go all the way to England to appear for the ICS examination, the Indian National Congress demanded in the 1880's that the ICS examination be held in India. A Congress sponsored agitation of students also took place in this connection. That was probably the beginning of the politicization of Indian students or at least the beginning of the cooperation between the students and the Congress. According to Myron Weiner:

> The earliest evidence we have to direct political activity on the part of students records an incident in Calcutta during the first decade of the twentieth century. In 1905 students in Eden Hindu Hostel (a dormitory) burned Lord Curzon in effigy and boycotted college examination to protest against the government's decision to partition the province of Bengal. During the next few years, Bengali students were among the most active participants in the early revolutionary parties. According

> to a report of the government's Sedition Committee in 1918, 68 out of 186 arrested in Bengal between 1907 and 1917 for revolutionary crimes were students, another 16 were teachers in schools and colleges.[4]

In Maharashtra and Punjab, revolutionary organizations were also established.

In 1920, the Congress leaders felt the necessity of utilizing the youthful energy and idealism of students in building up resistance to the British. With this end in view, the Indian National Congress passed at its annual conference a famous resolution calling for "...gradual withdrawal of boys and girls from schools and colleges and earnest attempts to establish National Institutions....By a National Institution it is meant any Educational Institution that does not receive aid from government, is not in any way controlled or inspected by government and is not affiliated to any University established by government."[5]

The students enthusiastically responded to the call of Congress, quit their schools and colleges and took part in the non-cooperation movement. In 1928, several important developments took place: A student organization under the leadership of Congress leader Lajpat Rai was formed in Punjab; in Bengal the All-Bengal Students' Association was formed which held its first conference in the following year under the presidency of Congress leader Jawaharlal Nehru; the students all over India agitated against the Simon Commission. In 1930, the students joined the Civil Disobedience Movement of Gandhi on a massive scale and in 1936 the All-India Student Federation—the first national organization of students—was founded with the blessings of such Congress leaders as Subhas Bose, Jawaharlal Nehru and J.P. Narayan. In 1940. the nationalist students separated from their communist colleagues and formed the All-India Students' Congress in 1945. The year 1942 marked the high water-mark of the student political activism in India. The nationalist students left their educational institutions, took part in strikes and demonstrations, went to jails and when the front line of Congress leadership was arrested, "took over some leadership responsibilities, and provided a key liaison between the underground leaders and the movement."[6]

Such is the history of the political involvement of students in India in the pre-independence period. It was encouraged, organized and guided at every stage by the national leaders of the highest rank.

In Post-Independence

After independence, the same national leaders took the view that the participation of students in politics was no longer necessary. They advised students to shun politics, study hard and do constructive work. As a means of depoliticizing the students, the Congress dissolved the All-India Student Congress and formed the non-political National Union of Students asking students of all shades and opinions to join the organization.

The motive of national leaders in asking students to quit politics is understandable. Any movement that the students were to lead now was to be

a movement against them. The British were gone, but the enormous problems of nation-building that the new rulers had to contend with remained. They had enough "pressure" to live with; they did not want the students to add to their discomfort by leading movements against them. No wonder that they tended to look upon any student movement, good or bad, as student unrest or student indiscipline. The society, in general, adopted such attitude towards the students.

Now the question is why did the students refuse to heed their elders' advice? Why are they striking against their own society and own leaders? The ultimate answer to any such question is that the students are not happy with a society which has failed to fulfil the dreams of an abundant society which freedom promised. The student today "finds himself faced with uncertainties and frustrations in his life and is trying desperately to draw the attention of society" to his plight and his demands. [7]

After independence, a tremendous expansion took place in higher education. The number of universities increased from 27 in 1950-51 to 101 in 1973-74 and the number of enrolled university students increased from 396,475 to nearly 3.86 million in 1973-74.[8] The vast weight of numbers has created an unbearable pressure on the education system. The first casualty of such growth in quantity has been the quality of education. Instead of becoming the centres of excellence, the colleges and universities have become mere degree-producing factories. A vast number of students who go to colleges and universities today have no real interest in higher education. They are there simply to get degrees which could be used as passports to higher-paid jobs. The tragedy is that the number of degree holders has so much exceeded the number of jobs available that a university degree no longer guarantees a job.

Some statistical figures relating to educated job seekers in just one state—West Bengal—will show the magnitude of the problem the country faces in this regard. The number of educated job seekers registered with the employment exchanges in West Bengal by the end of 1969, 1970, 1971 and 1972 were 183,000; 226,000; 370,000; and 648,000, respectively.[9] *The Statesman* (Calcutta) reports:

> The total number of job seekers on the live register of the employment exchanges in West Bengal in October this year (1973) was 1.5 million. Of these, about 700,000 were educated and they constituted about 47% of those registered with the employment exchanges. The total number of job seekers in June this year (1973) was 689,000. Of them, 181,000 had School Final or equivalent certificates; 352,500 were undergraduates; 67,000 arts graduates; 46,500 science graduates; 36,500 commerce graduates; 2,780 engineering graduates; 70 medical graduates; and about 2,600 graduates in various disciplines, including agriculture, veterinary science, social science and law.[10]

In actuality, the situation is likely to be worse than the employment exchange

figures indicate. Enrolment in the employment exchanges is voluntary and the situation is so desperate that many educated young people in West Bengal who registered their names with the employment exchanges as far back as 1963 are still to receive a call for State Government jobs. The problem of educated unemployment in other states is not much less acute. The national total of unemployed educated is nearly four million, i.e. one out of every five educated Indians is without a job.[11] The dissatisfaction of such a vast number of unemployed educated youth is bound to leave a serious strain on the Indian political system.

Socio-economic Aspects

The plight of educated youth is not simply economic in nature. It has a social aspect too. A father in India tries to meet all the educational expenses of his son. It is often very hard for him to do so especially if he has to pay for the 'education' of three or four children as is often the case. In a country which is overwhelmed with unemployment, there is naturally not much part-time employment for students. A few college students earn some money by working as private tutors. But their number is necessarily restricted and the amount they earn is also insignificant—at least not significant enough to meet all their educational expenses. One reason for the low remuneration is the oversupply of such job seekers in the market. Only the fortunate few from the upper middle and upper class can afford to employ private tutors for their children.

Naturally, therefore, students in India are mostly dependent upon their parents for the expenses of their education. The society also expects the parents to support the education of their children. A father invests his income on the education of his children expecting that he will get good 'return' on his investment when the son graduates from the university and gets a job. That is also the social norm in India. A grown-up son, after he graduates from the university and gets a job, is expected to contribute a substantial part of his earning to his parents. If he is the eldest son of the parents, he becomes a kind of 'second father' to his young brothers and sisters. He must pay for the education of his brothers and sisters, he must look after the parents. If the father retires from service by the time the eldest son starts earning then the dependence becomes total. Now in such a situation, if an educated young man does not get a job, he is not able to fulfil the role he was expected to fulfil and this frustrates not only him but also those who are dependent on him. Having nothing else to do, he probably goes to a coffee house, talks to fellow unemployed or potentially unemployed young people about the uselessness of their education, blames the system for their lamentable lot and come to the conclusion that the only way to improve their lot and the condition of others in society is to change the system.

How is the 'system' to be changed? They might well come to the conclusion that armed revolution is the way. This might have been one way by which the Nexalite movement in West Bengal was conceived and spread.

It would be wrong to think that those who joined the movement in West Bengal or for that matter in other parts of India did so out of selfish considerations to improve their own lot. A lot of young students who joined the movement were brilliant and had good prospect of building up a bright career afterwards and yet they joined the movement because they were inspired by the idealism of building a better society out of the destruction of the old one which they believed had become rotten.

Bhabani Sengupta gives a neat picture of the activities of the Naxalite youth in West Bengal, especially in Calcutta:

> [T]he Naxalites made their presence felt in Calcutta in a big way. "Naxalism" flourished in the deprivation and squalor of Calcutta and meshed with interparty conflicts, especially conflicts between the CPI (M) and the others. Mazumdar (the Naxalite leader) found his most responsive constituency among the youth of Calcutta, who enthusiastically took up his call to boycott examination, destroy books, beat up teachers and proctors, raid schools, colleges and universities, defile and even pull down portraits and statues of national heroes like Gandhi, Vidyasagar and Vivekananda, smash science laboratories, harass motorists, and generally defy all symbols of the establishment.[12]

Many of the young adherents of the Naxalite movement in different parts of India, especially in West Bengal, were in their adolescence. They could not be frustrated the way their job hunting seniors were, though they might well have anticipated the fate that was awaiting them after graduation from the university. The adherence of such young students to the Naxalite movement seemed to be more for idealism which is a remarkable characteristic of adolescence than for any other reason. As Humayun Kabir says, "...We must remember that idealism is the most marked characteristic of adolescence. There is at this stage of life a sudden upsurge of emotion and young persons are prepared to face any risk for the sake of an ideal. Hardship and danger have a special appeal to the young and if the right ideals are placed before them, there are no heights to which they may not rise."[13]

This probably gives an explanation of the self-effacing acts of violence in which the young Naxalite students indulged. As the Marvicks observed in a different context, by mounting off-campus attacks into community and political processes—using the university as a 'staging area'—these students seemed to act out their feelings of hostility, frustration and contempt for the 'system'.[14]

Not all students are Naxalites or militants like them, nor do all students 'reject' the present political system. What the vast majority of 'activist' and apolitical students want is changes in society, in the lives of its members or an improvement in the present social and political system of the country. The Indian students have high expectations of governmental output, "high expectations of change but little expectations that the activities of the gov-

ernment will be the major generator of that change."[15] They desire more positive governmental activity and yet they believe that the administration is not very responsive and that unless they adopt the coercive method, the government will not respond. Such a perception of the situation has led to violence among some students and cynicism among others.

Myron Weiner in an article on "Violence and Politics in Calcutta", has commented on the Indians tendency to look upon the government as the problem-solver. To quote him, "According to a public opinion survey, Calcutta residents look upon government, not private industry, as the institution most responsible for maximising employment, increasing wages, improving housing and providing more food, more clothing, medical and educational facilities. Efforts to obtain these improvements from the government are, given the low capacity of the state government to satisfy these demands, likely to remain frustrated".[16] Weiner points out that it is not only the low capacity of the government which produces frustration among those who make the demands; the government's inept handling of the demands also lead to dissatisfaction and in many cases coercion. The government often rejects many demands out of hand "without regard for the intensity of foreign of those making the demand. Only when public order is endangered by a mass movement then is the government willing to make a concession, not because they consider the demand legitimate, but because they recognize the strength of the group making the demand and its capacity for destructiveness. ...Requests of university students that tuitions not be raised...are ignored. But when such requests become demands, develop into mass movements, and threaten to disturb law and order in the city, the government concedes."[17]

It seems that the number of 'cynics' among students far exceeds the number of 'violent' among them. In 1968, the Indian Institute of Public Opinion conducted an opinion survey of 500 Indian students in the universities of Calcutta, Bombay, Delhi and Madras. The student respondents were asked: Does it matter to you which party is in power or is it a matter of no importance to you? 41 per cent of student respondents said that they did not care which party was in power in the country. It was a matter of no importance to them. This shows the cynicism of a section of Indian students. This might also indicate the students' distrust in politicians who often leave a gap between their promise and their performance and who, the students believe "regardless of party, ideology, or social class, are corruptible when in power."[18]

Indeed, a section of the young Indian students today charge the adult establishment and especially the politicians and rulers of the country with hypocrisy. What an angry young man of Delhi University told C.V. Gopalkrishnan of *The Hindu* is probably representative of the feelings of many students all over India: "Look at the heroes you parade everyday", he [the student] told me [Gopalkrishnan] tossing at me the newspaper which had disgusted him. The front page had a photograph of a Minister addressing a gathering with a finger pointing at the sky. "Here are the men who ask

us to toil for the New India, preserve her traditions, learn to be self-reliant and also to vote for them from one election to the other so that they can always remain where they are while we remain where we are."

Gopalkrishnan observes:

> The oddity about these boys and girls hailing from well-to-do families and raging over the inequalities of the existing social order did not perplex me for long. They were all born after independence and brought up on hopes which they felt had been belied. They know little about the freedom struggle and cared less about the heroes who had taken part in it. ...They could only see that the revolutionaries of yesterday had gone soft and become self-seeking and they were angry.[19]

It seems that the influence of what Morris-Jones calls 'saintly politics' has much to do with the cynicism of Indian students about the politicians. "In men's minds there is an ideal of disinterested selflessness by contrast with which almost all normal conduct can seem very shabby. This contributes powerfully to several very prevalent attitudes to be found in Indian political life: to a certain withholding of full approval from even the most popular leaders; to a stronger feelings of distrust of and disgust with persons and institutions of authority; finally, to profoundly violent and desperate moods of cynicism and frustration".[20] The observations of cynicism applies especially to students who are 'apoliticals'.

The Role of Education

So far as the education system is concerned, students (all the three types included in our analysis) have stressed the need for a change in the attitude of the 'educational establishment'. As a result of higher education being popular in the post-independence period, a large number of students from rural areas with diverse class backgrounds have come to the universities. These students, in fact, all students to a more or less degree, undergo a very traditionalist early socialization process. They receive training in submissive authority patterns from parents in homes. They learn to render unquestioning obedience to the elders. It is not that all feel happy about the parental domination of their lives but very few protest against it. The failure to protest might be due to fear or due to the desire to maintain the family harmony. When a student especially from rural areas come to a town or city for college or university education, he finds a totally different atmosphere. He becomes quickly intimate with his peer group (this becomes more so if he is living in a hostel) and discusses everything with friends from personal problems to the latest film to the denunciation of traditional values and behaviours to the politics of the leaders to the kind of change the social and political system should undergo. The college environment and peer group alter and sometimes drastically alter his pre-college perceptions. If he is studying especially liberal arts or social science he quickly comes to believe

that a university should nourish traditions of free inquiry, that it should be a market place of free ideas, that the relationships between man and man should be egalitarian. After all, the very purpose of liberal education is to make one think independently and develop ones' personality. He, therefore, starts questioning the validity of those things that are suspect in his eyes. He comes to think that if ideas are not challenged at a university where will they be challenged? To the extent he so believes and acts on that conviction, he is involved in a clash with the university authorities who belong to the old generation and therefore expect total obedience from the students.

So long as the mental distance between the young and old generation is not reduced, so long as the old generation sticks to the mentality that students should be passive recipients of orders from above, so long as the students' demands for greater student input into university decisions are not accepted, the student unrest and indiscipline will continue in the educational institutions of India.

Conclusion

To sum up students today are refusing to acquiesce in the existing condition of things. They are demanding innovation and changes both of the education system and the political system, viz. greater participation, a voice in decision-making with the elders, more jobs and more material facilities of life. In a word, they want more positive penetration of the society by the political system. They have high expectation of output from the political system and to the extent the system is unable to satisfy their demands, it leaves them dissatisfied and frustrated.

So far as the government is concerned, an approach deeper than sheer maintenance of law and order is necessary. The goal of government should be to integrate the dissatisfied students more into the existing system. And for that the Government has to adapt itself to the situation caused by student unrest by improving its capacities, especially the distributive and responsive capacities. A few areas where the government could take effective action are singled out below.

The policy of unlimited admission in Indian universities has brought in its trail certain important consequences:

(a) It has placed intolerable burdens on national and state budgets.
(b) It has led to unhappy student-teacher ratio (17 in 1965; in contrast to 10.5 in Australia and 8.7 in Great Britain). No wonder that relations between students and teachers are remote and impersonal today.
(c) Worst of all, it has led to an "unbearable" educated unemployment problem which has a very serious implication. As Malcolm Kerr observes, it is the "explosive compound of high aspirations and self-conscious dignity instilled by university education on the one hand, and the frustration and deception imposed by the conditions

> of the market, that has made university students and guaduates a continuing revolutionary force...".[21]

The policy of unlimited admission must, therefore, be replaced by one of selected admissions. Education must be related to the requirement of the economy. C.D. Deshmukh, as Chairman of the University Grants Commission, argued strongly:

> I have no doubt that we shall have to restrict university education by and large to the number of university educated men and women that the country will be needing from time to time.[22]

Any attempt to restrict admissions to universities would no doubt be regarded as the sustenance of elitism and the denial of common man's right to the essential facilities of advancement and self-realization. Higher education provides social mobility and the popular desire for it is, therefore, understandable. As Martin Trow says:

> Despite much loose talk about graduate unemployment or of an oversupply of educated men, it is still clear that people who have gone on to higher education thereby increase their chances for having more secure, more interesting, and better paid work throughout their lives.[23]

Nevertheless, the indiscriminate rush for higher education could be checked and it could be checked in two ways: (1) by providing job opportunities and vocational training at lower levels of education; (2) by delinking degrees from jobs or at least certain categories of jobs. Vocational education is, however, three times more expensive than ordinary education[24] and, therefore, India with her meagre resources cannot undertake vocationalization of education on a very large scale. Emphasis should also be given, in the opinion of this writer, on creating opportunities of self-employment for educated unemployed youths. The educated unemployed youths should be encouraged to set up small units on their own with financial help from the government and banks. The government could also provide "margin or seed money" to potential young entrepreneurs, facilitating thereby the flow of bank finance in connection with viable projects.

The arrangement could also be made for collaboration between the university and the industry. The former could carry on research for industry while the latter could provide training opportunities and technical apparatus to the university. "It is likely that these close relations not only help close the gap between university education and practical employment—a gap frequently deplored in India—but also put students in touch with potential future employers, a matter of greatest interest to both".[25]

Students in India study under very difficult conditions. The facilities available to students in colleges and universities are very inadequate. Food

served in college and university hostels is poor, libraries are overcrowded, and facilities for alternative activities such as organized sports are out of proportion to the number of students in universities. Student poverty generates resentment which frequently focuses on questions of fees, hostel, and food charges, etc. "The main themes of resentments of impoverished students", says Lipset, "particularly in countries without traditions of part-time student employment or without opportunities for it, are easily adaptable to the major themes of conventional extremist political agitation".[26] It is noteworthy in this connection that student protests in Gujarat in early 1974 which toppled the Government of Gujarat started initially over mounting mess bills in hostels. The government would be very well advised to establish a welfare fund for students.

Finally, the government should effect structural changes and offer greater self-government to students. As Kabir observes, if students are given a greater share in the governance of their own affairs, it will have a three-fold influence in restoring the sense of disciplines and responsibility they have so largely lost during the years of political struggle. It will keep them busy and engaged and employ their energies in useful activities. It will train them in the art of citizenship and self-governance so that in later life they may avoid mistakes which would otherwise damage the structure of society. Most important of all, in carrying out tasks they impose upon themselves, it will bring to them the joy of self-realization.[27]

Student unrest in India, I must observe in conclusion, never reached a crisis proportion, nor did it affect vitally the stability of the Indian political system. The Naxalite movement, however, showed that the students were potentially a powerful group, and that unless the energies of student population are channelled into constructive areas and the actual and potential causes of their unrest are removed, they might cause future difficulties for the Indian elite.

References

1. Philip G. Altbach, "Student Politics and Higher Education in India", in Philip G. Altbach (ed.), *Turmoil and Transition; Higher Education and Student Politics in India* (New York: Basic Books, 1968), p.v.
2. I have excluded from this category and from my analysis 'professional' activists, who as on-campus agents of political parties, pose a different kind of problem to the political and educational authorities of India than discussed in this paper.
3. Edward Shils, "Students, Politics and Universities in India", in Altbach, G. Philip (ed.) *Turmoil and Transition: Higher Education and Student Politics in India* (Bombay Lalvani Publishing House, 1968), pp. 2-3.
4. Myron Weiner, *The Politics of Scarcity,* (Chicago: University of Chicago Press, 1962), p. 161
5. *Ibid.*, pp. 161-162.
6. Philip G. Altbach, "Student Politics and Higher Education in India", in Altbach, G. Philip (ed.) *op. cit., p.* 33
7. S.K. Hulbe, "The Social Obligation of a College," in Shah, A.B. (ed.) *Higher Education in India* (Bombay: Lalvani Publishing house, 1967) p. 216n.

8. The overseas *Hindustan Times*, April 18, 1974.
9. *The Statesman* (Calcutta), December 21, 1973
10. *Ibid.*
11. *The Statesman* (New Delhi), August 27, 1973, p. 5.
12. Bhabani Sen Gupta, *Communism in Indian Politics*, (New York: Columbia University Press, 1972), pp. 342-343. See also J. Mohan's observation that among the causes of the Naxalite movement are: ".. inadequacy and corruption of our present educational system, the frustration of youth arising out of the lengthening queues of the unemployed, the disgust and the hatred roused by the degeneration in standards of political behaviours by leaders of the established political parties, not excluding the leaders of Left parties, and lastly the absence of any worthwhile national perspective." "Naxalites, the New Left," *Economic and Political Weekly*: Special Number, 1970, p. 1122.
13. Humayun Kabir, *Student unrest: Causes and Cure* (Calcutta: Orient Book Company, 1958), p. 41
14. See D. Marvick and E. Marvick, *UCLA Student Culture:* 1970-1972, (unpublished paper), p. 4
15. Sidney Verba, "Comparative Political Culture", in *L.W. Pye*, and Sidney Verba (eds.), *Political Culture and Political* Development, (Princeton: Princeton University Press, 1965) p. 539.
16. Myron Weiner, "Violence and Politics in Calcutta", *The Journal of Asian Studies*, Vol. xx: No. 3, May 1961, pp. 275.
17. *Ibid.*, p. 280.
18. *Ibid.*, p. 281.
19. C.V. Gopalkrishnan, "Glimpses of Young India," *The Hindu*, January 26, 1973.
20. W.H. Morris-Jones, "India's Political Idioms", in Philip, C.H. (ed.) *Politics and Society in India*, (New York: Frederick A. Praeger, 1962), p. 141.
21. Quoted in S.M. Lipset (ed.), *Student Politics* (New York: Basic Books, 1967), p. 31.
22. Government of India, Ministry of Education, *Indian University Administration* (Delhi: Govt. of India Press, 1958), p. 16.
23. Martin Trow, *Problems in the transition from Elite to Mass Higher Education* (Berkeley: University of California, 1972), p. 40.
24. *The Statesman* (New Delhi), August 15, 1973, p. 3.
25. S.H. Rudolph and L.I. Rudolph (eds.) *Education and Politics in India* (Cambridge, Mass.: Harvard University Press, 1972, p. 262.
26. S.M. Lipset, *op. cit.*, p. 27.
27. Humayun Kabir, *op. cit., p.* 38.

Journal of Higher Education
Vol. 4 No. 3 Spring 1979

A Study of the Image of Indian Journals on Management and Social Sciences in the International Academic Community*

ANAND S. DHAWLE AND AMITABHA GHOSE

Scope and Objective of the Study

The purpose of the study is to investigate the acceptability of Indian journals on social sciences in the international academic community. We are restricting ourselves only to academic journals. Academic journals are distinguished from daily newspapers and weeklies or periodicals written in a journalistic style by the nature of articles published in them. The acceptability of academic journals can be taken as an index of their research contents.

Academic articles on social sciences can be broadly classified into two classes:

(a) articles of abstract, theoretical and general nature. Such articles have a validity beyond time and place;
(b) articles dealing with the urgent problems of today. Such an article in an academic journal is distinguished from similar articles in journalistic periodicals by the nature of its scientific analysis, i.e., setting up of interesting hypotheses, considering their limitations and testing the hypotheses. On the other hand, an article in a newspaper or a weekly generally deals with the comparison of past and actual data and some speculations on the current trends.

In scientific research, there is constant need for the review and criticism of the results, or the "truths". "Free dissemination of information and open discussion is an essential part of the scientific process. Each separate study of nature yields an approximate result and inevitably contains some errors and omissions. Science gets at the truth by a continuous process of self-examination which remedies omissions and corrects errors. This process

*A study sponsored by the Indian Institute of management, Ahmedabad.

requires free disclosure of results, general dissemination of findings, interpretations, conclusions and widespread verification and criticism of results and conclusions".[1] As a matter of fact there are no well established results which cannot be reviewed or questioned in the light of changing circumstances. There is also an indispensable need for uncomprising objectivity and evaluation of scientific results. The academic journals are the best means for dissemination, reviewing, and criticism of any new results.[2] The professional bodies which are responsible for the publication of journals have therefore the task of selecting the articles which are most significant from the point of view of objective scientific creativity. The professional bodies have, therefore, to rise above regional or national or any group interest whatsoever in order to judge the academic worth of the articles presented to them for publication. Objectivity in the absolute sense is rarely attained by the journals. However, the individual biases of the journals more or less cancel themselves when a large number of international journals are considered.[3]

Academic journals gain reputation over a period of time by continuously publishing articles of substantial research content. Generally, journals of repute are also the journals which are most widely subscribed to. If an academic journal is widely subscribed to, then one can almost safely conclude that the journal must have established its reputation by papers of significant research content. For our study we have taken the criterion, of wide acceptability in academic institutions of different parts of the world for ranking the journals. Using this criterion, we compare the Indian with the US and British journals. We also study which Indian journals are more reputed than the others.

Methodology of the Research

A list of important academic journals on social sciences from different countries was prepared and sent to the libraries of the universities all over the world with a letter requesting them to tick-mark the journals which they are subscribing to.

With all the responses received, the data were tabulated as shown in Table 1. In Table 1, the journals are classified according to subjects. For each journal, its title and country of origin are mentioned and the number of universities in different countries taking this journal is shown. The names of the countries are shown on the top of the columns, while the number enclosed in the bracket shows the number of universities which had responded to our request. From Table 1, Table 2 was prepared separately for each of the countries: India, USA and UK. In preparing Table 2, first of all, percentage acceptance in the home country for each journal was calculated. Similarly, the percentage for each journal in the country other than the home country was calculated. Table 2 (India) shows the ratio of home to foreign acceptance for Indian journals which are classified subjectwise. Thus, for instance, the journal "Chartered Accountant" has 40% home

and only 6% foreign acceptance. Similarly, Table 2 (USA), Table 2 (UK) show the ratios of home to foreign acceptance of US and British journals. Finally, Table 3 gives a comparative study subject-wise of the relative acceptance of US, British and Indian journals. Only those subjects are chosen for which there are Indian journals comparable to American or British ones. Thus some subjects are excluded from this comparative study as for example, "Education". Our assumption that there are no comparable Indian journals on "Education" is based on the fact that not a single Indian journal on "Education" has been recommended by the IIMA faculty up to now. The figure for each subject and for each country is obtained by taking an average of the ratios (home: foreign) of all the journals of that country of that subject. For instance, "Accounting" shows 10.83 for India. This is the average of the two Indian journals in "Accounting": "Chartered Accountant" (Ratio—40:6) and "Prajnan" (Ratio—30:2). To show how the relative acceptance varies for different subjects in different countries, a comparison is made in Table 4, which shows subject-wise relative difference between USA and UK, USA and India, UK and India. Our conclusions are based mainly on the results of Table 4. They are clearly subject to the limitations of the sample of responses which we received. We cannot claim that our study has considered "acceptance" relative to "all" the universities of the world. However, we can claim that the responses of the major and well known universities have been considered in this study.

Inferences from the DATA

A striking fact revealed by comparing Table 2 of India with Table 2 of US is the comparative low acceptance of many of the Indian journals even in the home country. It is difficult to surmise whether this is due to "the academic worthiness" of the journals or due to lack of funds or interest in many of the academic institutions in India. Another striking fact is that in case of many of the Indian journals both the figures for home and foreign acceptance are low.

Table 3 showing the subject-wise comparative study of relative acceptance of journals bring out very clearly the facts that except for "Economics" and "Industrial Relations," most of the Indian journals have comparatively very poor acceptance in the international academic community. Table 4 shows that Indian journals on "Accounting" have comparatively the least foreign acceptance. Even journals on "Psychology" and "Management" lag far behind with respect to their counterparts in USA or UK. Only journals on "Economics" and "Industrial Relations" can be considered to be on par with the American and British journals.

As pointed out earlier in the scope and objectives of the study, we have tried to grade Indian journals according to the relative high acceptance in the international academic community. This study should at least give an incentive to specialists in "Accounting", "Management" and "Psychology" to investigate whether the research contents of the Indian journals in these

Table 1

ACCEPTANCE OF JOURNALS BY UNIVERSITIES IN VARIOUS COUNTRIES

No.	Subject/Title of the Journal	Origin	USA (11)	CAN (4)	UK (5)	CONT (17)	IND (10)	SEA (8)	A&NZ (3)	AFR (1)
1	ACCOUNTING									
	Abacus	AUS	7	3	2	1	1	3	3	0
	Accounting & Business Research	ENG	5	3	3	1	2	3	3	0
	The Accounting Review	USA	10	4	2	6	4	6	3	1
	Chartered Accountant	IND	4	0	0	0	4	1	0	0
	Prajnan	IND	2	0	0	0	3	0	0	0
2	AGRICULTURE									
	Indian Journal of Agricultural Economics	IND	7	2	3	3	9	4	2	0
3	ANTHROPOLOGY									
	Eastern Anthropologist	IND	7	1	2	5	7	4	2	0
4	BANKING									
	Journal of Money, Credit and Banking	USA	10	4	1	3	2	6	3	0
	Reserve Bank of India Bulletin	IND	7	2	2	1	9	2	1	0
5	BUSINESS									
	Business Horizons	USA	10	3	1	0	1	3	2	1
	California Management Review	USA	9	4	1	1	1	5	1	0
	Kyklos	SWI	11	4	3	11	6	6	3	0
	Philippine Review of Business and Economics	PHI	4	1	0	0	1	3	0	0
6	COMMERCE									
	Foreign Trade Review	IND	7	0	0	0	5	0	1	0

(Contd.)

Table 1 *(Contd.)*

No.	Subject/Title of the Journal	Origin	*USA* (*11*)	*CAN* (*4*)	*UK* (*5*)	*CONT* (*17*)	*IND* (*10*)	*SEA* (*8*)	*A&NZ* (*3*)	*AFR* (1)
7	ECONOMICS									
	American Economic Review	USA	11	4	5	13	8	7	3	1
	Applied Economics	ENG	7	4	5	3	2	4	3	0
	Arthavijnana	IND	7	1	2	0	7	4	2	0
	Eastern Africa Economic Review	KEN	10	3	3	2	2	1	2	0
	Economic Development and Cultural Change	USA	10	3	4	9	8	7	3	0
	Economic Journal	ENG	11	4	5	11	7	7	3	1
	Indian Economic Journal	IND	10	3	3	5	9	6	3	1
	Indian Economic Review	IND	8	1	2	1	6	7	2	1
	Journal of Development Studies	ENG	9	4	5	7	4	6	3	0
	Journal of Public Economics	NET	10	2	2	5	0	3	2	0
	Review of Income & Wealth	USA	10	3	4	5	1	3	2	0
	Sankhya—Series A	IND	10	3	2	3	8	5	3	1
	Sankhya—Series B	IND	10	3	2	4	8	5	3	0
	World Development	ENG	7	1	1	1	1	1	3	0
8	EDUCATION									
	Higher Education	NET	9	2	4	10	1	4	2	1
	Sociology of Education	USA	9	3	2	5	3	5	2	0
9	FINANCE									
	Journal of Finance	USA	10	4	1	6	4	6	3	1
	Public Finance	NET	11	2	3	7	5	4	3	1
10	INDUSTRIAL RELATIONS									
	British Journal of Industrial Relations	ENG	7	4	5	6	2	5	2	0
	Indian Journal of Industrial Relations	IND	6	2	1	1	3	1	1	0
	Industrial & Labour Relations Review	USA	9	4	3	7	3	5	2	1

11 MANAGEMENT									
Decision Sciences	USA	8	3	1	0	0	0	0	0
Indian Management	IND	5	0	0	0	4	0	0	0
Journal of Management Studies	ENG	7	3	4	6	2	5	2	0
Management Decision	ENG	4	3	2	3	0	0	1	0
Management International Review	WGR	8	4	2	3	1	3	1	0
Omega	USA	5	2	0	4	1	1	2	0
12 ORGANIZATIONAL BEHAVIOUR									
Social Forces	USA	11	4	4	9	6	7	3	1
Social Science Research	USA	9	2	1	4	1	2	2	0
Theory & Society	USA	10	2	1	6	2	1	1	0
13 PLANNING									
Long Range Planning	ENG	8	3	2	1	1	2	3	0
14 POLITICAL SCIENCE									
Africa Quarterly	IND	8	2	1	1	7	0	0	0
India Quarterly	IND	11	2	1	3	8	5	2	0
Indian Journal of Political Science	IND	10	0	1	2	9	3	1	0
Local Self Government Institute Quarterly Journal	IND	4	0	1	0	6	0	0	0
Visvabharati Quarterly	IND	3	0	1	0	7	0	0	0
15 PSYCHOLOGY									
American Psychologist	USA	10	4	4	10	6	6	3	0
Indian Journal of Applied Psychology	IND	5	0	0	0	3	0	0	0
Indian Journal of Psychology	IND	9	0	0	1	7	1	0	0
Journal of Applied Psychology	USA	10	4	5	10	8	7	3	1
Journal of Occupational Psychology	ENG	5	4	4	3	2	1	1	0
Organizational Behaviour and Human Performance	USA	10	4	3	6	2	2	3	0
Psychological Studies	IND	5	2	0	0	6	0	0	0

(Contd.)

Table 1 *(Contd.)*

No.	Subject/Title of the Journal	Origin	USA (11)	CAN (4)	UK (5)	CONT (17)	IND (10)	SEA (8)	A&NZ (3)	AFR (1)
16	PUBLIC ADMINISTRATION									
	Indian Journal of Public Administration	IND	9	2	3	0	9	2	2	0
	International Review of Administrative Sciences	BEL	9	1	2	3	4	5	1	0
	Journal of Administration Overseas	ENG	9	2	3	4	4	3	2	0
	Public Administration	AUS	4	0	2	0	5	2	3	0
	Public Administration	ENG	10	4	4	4	9	6	3	0
	Public Administration Review	USA	11	3	4	8	8	6	3	1
17	QUANTITATIVE METHODS IN MANAGEMENT									
	Infor	CAN	7	3	1	0	1	2	1	0
	Opsearch	IND	3	3	0	1	3	3	0	0
	Sankhya—Series C	IND	5	2	1	2	6	2	3	0
18	SOCIAL PSYCHOLOGY									
	Behavioural Sciences and Community Development	IND	5	2	0	0	6	0	1	0
	Human Relations	USA	11	2	3	9	6	5	3	1
19	SOCIAL SCIENCES									
	Human Organization	USA	11	3	5	6	5	6	2	1
	Indian Journal of Social Work	IND	10	0	2	1	7	3	2	0
	International Social Science Journal	USA	9	1	3	8	9	7	3	0
20	SOCIOLOGY									
	American Sociological Review	USA	11	4	5	14	9	8	3	1
	British Journal of Sciology	ENG	11	4	5	15	9	7	3	1
	Rural Sociology	USA	11	4	2	8	5	5	3	0

	Sociological Bulletin	IND	8	1	1	1	7	2	2	0
	Sociological Quarterly	USA	11	3	2	1	2	2	2	0
	Sociology & Social Research	USA	11	2	3	9	5	6	2	0
21	TECHNOLOGICAL FORECASTING									
	Technological Forecasting and Social Change	USA	10	4	1	1	1	1	2	1

A&NZ — Australia & New Zealand
AFR — Africa
AUS — Australia
BEL — Belgium
CAN — Canada
CONT — European Continent excluding UK
ENG — England
IND — India
KEN — Kenya
NET — Netherlands
SEA — South-East Asia excluding India
UK — United Kingdom
USA — United States of America
WGR — West Germany

Table 2 (India)

RELATIVE PERCENTAGE ACCEPTANCE OF INDIAN JOURNALS.

No.	*Subject/Title of the Journal*	*Home : Foreign*
1.	ACCOUNTING	
	Chartered Accountant	40 : 6
	Prajnan	30 : 2
2.	AGRICULTURE	
	Indian Journal of Agricultural Economics	90 : 43
3.	ANTHROPOLOGY	
	Eastern Anthropologist	70 : 39
4.	BANKING	
	Reserve Bank of India Bulletin	90 : 30
5.	COMMERCE	
	Foreign Trade Review	50 : 13
6.	ECONOMICS	
	Arthavijnana	70 : 34
	Indian Economic Journal	90 : 75
	Indian Economic Review	60 : 56
	Sankhya—Series A	80 : 69
	Sankhya—Series B	80 : 55
7.	INDUSTRIAL RELATIONS	
	Indian Journal of Industrial Relations	30 : 24
8.	MANAGEMENT	
	Indian Management	40 : 6
9.	POLITICAL SCIENCE	
	Africa Quarterly	70 : 21
	India Quarterly	80 : 45
	Indian Journal of Political Science	90 : 27
	Local Self Government Institute Quarterly Journal	60 : 8
	Visvabharati Quarterly	70 : 6
10.	PSYCHOLOGY	
	Indian Journal of Applied Psychology	30 : 6
	Indian Journal of Psychology	70 : 14
	Psychological Studies	60 : 13
11.	PUBLIC ADMINISTRATION	
	Indian Journal of Public Administration	90 : 40
12.	QUANTITATIVE METHODS IN MANAGEMENT	
	Opsearch	30 : 20
	Sankhya—Series C	60 : 35
13.	SOCIAL PSYCHOLOGY	
	Behavioural Sciences & Community Development	60 : 18
14.	SOCIAL SCIENCES	
	Indian Journal of Social Work	70 : 34
15.	SOCIOLOGY	
	Sociological Bulletin	70 : 30

Table 2 (USA)

RELATIVE PERCENTAGE ACCEPTANCE OF USA JOURNALS

No.	*Subject/Title of the Journal*	*Home : Foreign*
1.	ACCOUNTING	
	The Accounting Review	90 : 70
2.	BANKING	
	Journal of Money, Credit & Banking	90 : 47
3.	BUSINESS	
	Business Horizons	90 : 44
	California Management Review	81 : 32
4.	ECONOMICS	
	American Economic Review	100 : 91
	Economic Development & Cultural Change	90 : 67
	Review of Income & Wealth	90 : 42
5.	EDUCATION	
	Sociology of Education	81 : 43
6.	FINANCE	
	Journal of Finance	90 : 67
7.	INDUSTRIAL RELATIONS	
	Industrial & Labour Relations Review	81 : 65
8.	MANAGEMENT	
	Decision Sciences	72 : 13
	Omega	45 : 23
9.	ORGANIZATIONAL BEHAVIOUR	
	Social Forces	100 : 82
	Social Science Research	81 : 27
	Theory & Society	91 : 24
10.	PSYCHOLOGY	
	American Psychologist	90 : 67
	Journal of Applied Psychology	90 : 89
	Organizational Behaviour and Human Performance	90 : 48
11.	PUBLIC ADMINISTRATION	
	Public Administration Review	100 : 79
12.	SOCIAL PSYCHOLOGY	
	Human Relations	100 : 69
13.	SOCIAL SCIENCES	
	Human Organization	100 : 71
	International Social Science Journal	81 : 58
14.	SOCIOLOGY	
	American Sociological Review	100 : 96
	Rural Sociology	100 : 57
	Sociological Quarterly	100 : 33
	Sociology & Social Research	100 : 50
15.	TECHNOLOGICAL FORECASTING	
	Technological Forecasting and Social Change	90 : 44

Table 2 (UK)

RELATIVE PERCENTAGE ACCEPTANCE OF UK JOURNALS

No.	*Subject/Title of the Journal*	*Home : Foreign*
1.	ACCOUNTING	
	Accounting & Business Research	60 : 40
2.	ECONOMICS	
	Applied Economics	100 : 50
	Economic Journal	100 : 88
	Journal of Development Studies	100 : 62
	World Development	20 : 30
3.	INDUSTRIAL RELATIONS	
	British Journal of Industrial Relations	100 : 49
4.	MANAGEMENT	
	Journal of Management Studies	80 : 45
	Management Decision	40 : 23
5.	PLANNING	
	Long Range Planning	40 : 41
6.	PSYCHOLOGY	
	Journal of Occupational Psychology	80 : 32
7.	PUBLIC ADMINISTRATION	
	Journal of Administration Overseas	60 : 42
	Public Administration	80 : 68
8.	SOCIOLOGY	
	British Journal of Sociology	100 : 95

Table 3

RATIOS OF 'RELATIVE ACCEPTANCE' OF JOURNALS ACCORDING TO SUBJECTS

	Subject	*Relative acceptance for*		
		USA	*UK*	*INDIAN*
1.	Accounting	1.29	1.50	10.83
2.	Banking	1.91	—	3.00
3.	Economics	1.53	1.35	1.39
4.	Industrial Relations	1.25	2.04	1.25
5.	Management	3.75	1.76	6.67
6.	Psychology	1.41	2.50	4.87
7.	Public Administration	1.27	1.30	2.25
8.	Social Psychology	1.45	—	3.33
9.	Social Sciences	1.40	—	2.06
10.	Sociology	1.96	1.05	2.33

Table 4

VARIATIONS IN RELATIVE ACCEPTANCE

Subject	*Absolute value of the difference*		
	USA/UK	*USA/INDIA*	*UK/INDIA*
1. Accounting	0.21	9.55	9.33
2. Banking	—	1.09	3.00
3. Economics	0.18	0.14	0.03
4. Industrial Relations	0.79	0.00	0.79
5. Management	1.99	2.92	4.91
6. Psychology	1.09	3.46	2.37
7. Public Administration	0.03	0.98	0.95
8. Social Psychology	—	1.88	3.33
9. Social Sciences	—	0.66	2.06
10. Sociology	0.91	0.38	1.28

Annexure—I

PUBLISH OR PERISH ?

Why the high value on publications by faculty? Are there not other more important indicators of one's worth to the academic community? Is getting an article or book published all that significant? What does it take to publish? And where does it get you? The following outline of answers to questions pinpoints the high value placed upon scholarly publications by a teacher. The implications should speak for themselves.

I. The demands
   A. Initiative
   B. Imagination
   C. Intelligence

II. The dimensions
   A. Reflecting: the conception
      (1) Ideas organized
      (2) Ideas synthesized
      (3) Ideas innovated

B. Researching: the concentration
   (1) Experimental
   (2) Observational
   (3) Literary

C. Reporting: the contribution
   (1) Findings, involving method
   (2) Interpretation, involving theory
   (3) Recommendation, involving application

III. The dividends
   A. Amplified evaluation
      (1) Marketable ideas subjected to criticism by wider community of scholars
      (2) Contribution augmented and modified by wider community of specialists
      (3) Contribution adapted by wider community of cognate disciplines

   B. Authoritative reputation
      (1) Personal
      (2) For the affiliate
      (3) For the discipline

   C. Academic application
      (1) Plowed back into teaching
      (2) Stimulation for further research
      (3) Basis for further writing

JAMES O. BUSWELL
Assistant Professor of
Sociology and Anthropology
Trinity College
(Ph.D., Columbia)

Improving College & University Teaching, Vol. 23, No. 4, Autumn 1975, pp. 219.

Journal of Higher Education
Vol. 4 No. 3 Spring 1979

Reorientation of Geological Education

I.C. PANDE

In a developing country like ours, higher education should aim at solving many intricate problems of economic betterment of the common masses and the country as a whole. At present, great stress is being laid on social and economic uplift of common man which can be attained only if we reorientate our educational policy. Modern education and researches which are being imparted or carried out cannot afford to stave off our responsibility for betterment of common man and cater to the need of national programmes. Geoscientists, in particular geologists, have to share a great responsibility to achieve the national objective because much of our national reconstruction and social uplift plans depend on the development of country's natural resources. Many of our development projects have to be curtailed due to paucity of the material and funds available to us. Naturally, in our country, the basic need for an over-all reorientation of teaching of Geology and its various branches like Mineral Economics, Geostatistics, Mathematical Geology, Exploration Geology, Geotectonics, Geohydrology, Geophysics, Geochemistry, Engineering Geology, Environmental Geology, Geoscience resources technology, etc., must be incorporated in the syllabus of various universities and particularly at the post-graduate level. However, it may be pointed out that it is rather difficult to acquire a sound knowledge and training in all the branches of geology at the present level of courses and syllabi which are adopted by various educational institutions. Further, there is a great explosion of knowledge in all the branches of science and it has become difficult for one to cope with the present rate of development in all the well-established and specialized fields of geology. It is rather very difficult task for a student of geology in a university—particularly when it is considered to be essential—to attain a good background of knowledge in the various border-line science subjects like Physics, Chemistry, Mathe-

matics, Biology, Astronomy besides languages with the present-day system of geological education. A close scrutiny of the syllabi at different levels of science education clearly brings forth the fact that great change is needed at the school and undergraduate level of education. This calls for integrated approach in framing the syllabi of various courses beginning with the higher secondary school stage so that a good grounding in the fundamentals of the basic and border-line science could be given to a student who is keen to adopt geological profession as his life career. I suggest that more stress should be laid on the evolutionary process in education and a telescopic approach from the secondary school level to the undergraduate stage has to be initiated. The development of geology which is a border-line science suffers greatly when this approach in framing the syllabi for high school and undergraduate classes is ignored.

I am of the opinion that geology should be introduced from a lower level, say, from 8th class in schools where other basic sciences form the syllabus of studies for Matriculate and Higher Secondary examinations, thereby a student will be able to appreciate the value of fundamentals of the earth and its resources. Such science-oriented teaching is essential for all-round development of our student community. This will not only help them to know their country but also its natural resources. Many experiments have been conducted in the field of education during the last three decades and one cannot deny the fact that these have led to lowering the standard of teaching in many cases. A student at the college and post-graduate level should be well-equipped with the elementary and basic concepts of various science disciplines before he goes for specialization in geology.

This is more or less the partern of education in developed countries which has led to such tremendous strides in scientific and industrial developments in these countries. If, at all, we have to follow a pattern borrowed from any such countries, we should weigh out the facts before implementation otherwise the growth of our student community is checked.

Analysing the education pattern in Geosciences, one is shocked to find that at the graduation level a student is introduced to this discipline which leads to a very shabby development of geoscience students as compared to other disciplines of science. Hence, the call of the day is to impart education in this field right from the school level as is done in Physics, Chemistry, Mathematics, etc., and thereby ensure the proper development of the Geosciences too. Presently, four-year education pattern is followed in the undergraduate and post-graduate levels of Geoscience education which is decidedly inferior to other science education pattern. Based on the above facts, an attempt is made in this article to suggest some modifications in the teaching curricula of Geosciences at the university level. No attempt has been made in this report to formulate the syllabi. Even if this article is able to initiate some discussions in this direction, the purpose is served.

Background

Geology forms a distinct discipline under the earth sciences and is the

youngest of all the natural and physical sciences. In 1473, Richard de Bury used the term Geology as applicable to earthly laws. In past, it was treated as a minor discipline of knowledge. Many persons, including some geologists, consider geology as of academic interest only. However, K.C. Dunham (1971) states that in the last fifty years or so of the present century, as a result of its achievements, Geology has met with growing needs of mankind. It is now a well-established fact that geology is an interdisciplinary subject.

In recent years, much advancement has been made in understanding the earth, its crust, its structure and composition. The critical need for raw material for industries and search and development of natural resources are much imperative factors which have forced mankind to examine and explore for new source of required raw materials. Earth scientists are called upon to meet the challenges of the growing civilization.

Before suggesting the changes in our post-graduate curriculum for Geology students, it will be of interest to give a resume of the development of geology education in our country and the new challenge to the earth scientists.

Teaching of Geology in India was first commenced at the Presidency College, Madras, which turned out the first graduates in 1891. It was taught as an auxiliary subject. Since then, there has been a marked progress in geological education in this country. Till recently, the universities or colleges were teaching elementary courses in Geomorphology and giving comparatively detailed instructions in Petrology, Optical and Chemical Mineralogy, Historical and Regional Geology, Palaeontology, Stratigraphy and Economic Geology with meagre field training.

The training in the field of Geology has been modified from time to time based on the recommendations in various reports, namely, by Prof. W.D. West in 1945, report of the Geological Education Committee of Government of India and on the basis of a symposium on training of personnel for the mineral industry conducted by the Mining, Geological and Metallurgical Institute of India in 1952 in which Dr. J.B. Auden urged modification in teaching and appointment of teachers of ability. In 1957, Shri R.P. Sinha, while addressing the Mining, Geological and Metallurgical Institute of India, came to the conclusion that the courses be reoriented according to job potentialities of the country and also that the enrolment rate for the post-graduate degree should be according to the requirement of the country. Prof. C.J. Roy made a detailed study to examine and evaluate geological education in India at the invitation of the University Grants Commission. He indicated a number of enhanced methods of teaching and turning out of competent geologists. One of the important points raised by him was the greater participation between the universities and Geological Survey Departments of Government of India and State Governments and also modifying the courses as job-oriented. It is also suggested that there should be close cooperation between universities and industries dealing with minerals and mines. At present, there are more than 50 institutions

imparting geological education in India. However, it is a general feeling that present system and the geological instructions that are being imparted by most of the universities are such that make the students Jack of all trades and master of none.

Restructing of Courses

In the light of recent advances in Geology, a time has come that the courses in Geology need proper orientation and development according to the national requirement. There is a pressing need for coordinated action on the scientific studies and raising demand on earth's resources. This could be achieved through proper training, development of geological and related disciplines so as to analyse, understand and explain the geological processes and phenomena of mineralization etc.

Geology has to be considered like all other science subjects (1) as a cultural subject, (2) as a professional subject, and (3) as an ancillary subject in Engineering courses, i.e., Metallurgy, Civil, Space Research, Defence, etc.

At present a student who takes Geology has practically no back-ground of Geology till he joins Geology at the university stage and thus he takes time to understand the fundamentals of Geology and hence the standard which we desire cannot be attained. To enhance the standard in the discipline of Geology, it is suggested that Geology be introduced as an elective subject in Higher Secondary schools and Pre-University classes. The Kothari Education Commission (1966) had recommended that "Earth Sciences" be introduced as a subject both at Primary School level and also at Higher Secondary level. The time has come that the educational system in earth sciences must be modified and reoriented so that trained personnel are produced to carry out certain jobs required by the country.

Apart from this, the divisions into geology and applied geology—as is prominent in some of the universities—should be abolished. Geology is a field science, and therefore, is an applied science and there cannot be two divisions of Geology (as applied and non-applied). However, it is also suggested that the duration of M.Sc. course in Geology be increased by one year and specialization in one of the branches be introduced in the final year of the M.Sc. course.

A tentative post-graduate course in Geology could be framed on the following lines:

M.Sc. 2 year course, keeping in view 10+2+3+2 system

(1) Two months of every year should be allotted for intensive field training, geological mapping and assignment to some geological organization, e.g., Geological Survey of India, Oil & Natural Gas Commission, Mineral Exploration Corporation, etc. Out of this training period, assignment to any of such organizations should be for about two months or more in the final year, after the M.Sc. (final) examination and before the results are declared—submission of technical report based on this training.

(2) Much stress should be laid on training in Methodology of Geoscience both of field and laboratory techniques. Stress during the field training should be laid on the following:

(a) It is supposed that the student has done one inch mapping during the B.Sc. stage. Then at M.Sc. stage geological mapping on 4"=1 mile or mapping on 16"=1 mile of a mineralized belt or coal beds should be done of a selected small area whose geology has been well-established. Such areas are fixed for training of students in all foreign countries.

(b) Contouring and geological mapping on the 1:1000 scale or even larger scale using the telescopic alidade etc., and Brunton-pace or Brunton-tape as also structural mapping, lithofacies mapping, preparation of Isopach etc., should be done.

(c) Based upon the choice and selection of the students, they should be trained in (i) Palaeontological, Micropalaeontological, Sedimentological and Stratigraphic investigations; and (ii) Exploration Geology including geochemical and geophysical prospecting, drilling, etc. Training in methods used in hard rock geology, ground water & fuel and geotectonics, etc., should be imparted.

It has been advocated time and again that education should be meaningful to the society. To achieve this, an endeavour may be made to define the core subjects so as to satisfy the requirement of a successful geologist. While framing the courses in geology for undergraduate and post-graduate classes, it must be borne in mind that not only the basic disciplines but also the interdisciplinary subjects which have bearing on the understanding of the geology be taught in the Intermediate and first year of undergraduate classes. Ancillary subjects like Physics, Chemistry, Botany, Zoology, Mathematics and Statistics should form part of the courses for the Intermediate and undergraduate level. Now that the University Grants Commission and the Ministry of Education, Government of India, have come out with the 10+2+3+2 tier system of education, it is strongly recommended that at the secondary and undergraduate levels, fundamentals and basic principles of Geology should form the subject matter of the syllabi and instructions. It should slowly reach the level of B.Sc. Honours stage of any developed country. Geology is a field science, therefore, it is essential to give extensive field training in both undergraduate and post-graduate stages.

At the post-graduate level with advanced courses in Geology, specialization in particular fields be introduced. The post-graduate training in Geology should be channelised into two branches, i.e., the Soft Rock Geology and the Hard Rock Geology. In the first year of M.Sc. course, advanced training in Structural Geology and Geotectonics, World Stratigraphy, Indian Geology, Economic Geology and Geochemistry should form a common course for both the branches. Those who opt for soft rock, they should offer advanced Palaeontology and Sedimentology as additional courses. Those who opt for Hard Rock Geology will offer advanced Minera-

logy and Petrology. In the final year of M.Sc. course, specialization be introduced along with courses in methods of Geophysical and Geochemical Prospecting, Mineral Economics and Exploration Geology. He may also specialize in one of the subjects: Ore Geology, Petroleum Geology, Coal Geology, Drilling, Hydrogeology, Engineering Geology and Mining Geology, etc.

Conclusion

In the foregoing pages, some suggestions have been made to improve the present method of imparting geological education in India. It is also believed that by defining the pattern of education and examination incorporating the suggestions made by me, the geologists shall be trained according to the need of the country. It is further suggested that in order to achieve a uniform geological education and training programme in the country, Geological education should be under a Ministry of Geology which will also be in-charge of various government organizations like the Geological Survey of India, etc. This will help in formulating uniform policy and assure of closer cooperation between the institutions and governmental organizations. Such cooperations in the developed countries have yielded very promising results. This type of cooperation dissuades duplication of research investigations and assures of complete as well as up-to-date authentic reports which help in formulating national policies based on resource potential appraisal.

Journal of Higher Education
Vol. 4 No. 3 Spring 1979

On Implementation of a Mastery Learning Strategy

RAJESHWAR N. MATHUR

In the last two decades Educational Technology has made significant advances in the developed countries. Some of these recent innovations have also been carried out in India, notably by the National Council of Educational Research and Training. The new Educational Technology provides different methods of learning to the students. Different students learn by different methods and by providing suitable instruction about 95% of the students could be expected to master a given task. The schools, colleges and universities in India could certainly benefit from these innovations. Also suitable instruction increases students' interest in the task assigned and could increase retention in our schools. Some of the new systems of instruction which require expensive sophisticated electronic equipment probably could not be used on large scale in India. On the other hand there are mastery oriented and student tutored systems of instruction which with slight modifications could become very useful in countries like ours.

The Keller Plan or PSI[1] was first described by Fred S. Keller[2] in his article "Good Bye, Teacher. . . ." In 1970-71 the Educational Research Centre of the Massachusetts Institute of Technology conducted summer courses/workshops to train college and university professors from all over the United States, to implement the Keller Plan. This Plan was initially more popular in psychology. Hess's comprehensive survey[3] in November 1972 located 877 Keller courses in psychology alone, and about half the total number of science courses offered in this format. This Plan is becoming more popular not only in the USA but also in UK, New Zealand, Australia, and Asian countries. It was also successful at the Indian Institute of Technology, Delhi[4] where the students indicated preference for more Keller Plan courses.

Main Features of the Keller Plan

The content coverage in a Keller Plan course is same as in a traditional course. The contents of a Keller course are divided into several units, preferably one unit per week[5]. For each unit the student is given a *'study guide'* which contains an introduction to the unit to create interest and to link the present unit to the past and future units, discretely stated behavioural objectives of the unit, suggested procedure for achieving the objectives, notes and comments. If a good textbook is available the student is asked to read pages of the book and the study guide is a 'skeleton' study guide. More references or written material is provided if a good textbook is not there. It is, therefore, much easier to try the Keller Plan in a course which has a good textbook. If film strips, film loops, tapes, records, programmed material, etc., are available the student is instructed to use the same on individual basis. This material is kept in a room where the student may go anytime he desires.

There are no formal lectures given and the student works on his own at his own initiative. Some informal lectures, announced much ahead of time and requiring completion of a certain number of units for admission, may be given for entertainment and motivation. The student works at a speed commensurate with his ability. Thus, the Keller course is *self-paced* to meet the needs of slow as well as fast learners. In the beginning of the course each student is given a chart suggesting pace for completing all the units in time. When the student needs help in his work he goes to his tutor who removes his difficulty on *individual* basis. About 6 to 8 students are assigned to a tutor who is generally a senior student having a high grade in the same course taken before. If no senior student tutors are available, the 'bootstrap' system may be used where faster learners of the same class tutor other students. When the student thinks he has mastered the unit, he asks his tutor for a test which is graded immediately in the presence of the student. Thus this formative evaluation is written as well as oral. If the student demonstrates mastery of the material he gets a 'pass' and goes on to the next unit. Student's failure to demonstrate mastery gets him a 'no pass' and he repeats the same unit with suggestions from the tutor (positive reinforcement). The tutor points out the errors of the student and recommends alternative learning resources. After necessary preparation the student takes another test on the same unit. This process is repeated until the student has demonstrated mastery of the unit. There is no penalty for taking more than one test on the same unit; what counts is the mastery of the material. The final grade, of course, partially depends on the number of units passed in the semester. [See the Appendix, (sample course policy), for mechanics, grading policy, and emphasis on main features of a Keller course. This course policy was written for first year student.] In ungraded class this time limit of one semester is not there and self-pacing is allowed over a longer period of time.

Reasons not to use the Keller Plan

The Keller Plan cannot solve all of a teacher's problems. There are circumstances under which it would be neither possible nor desirable to use this method. There are physical, political, bureaucratic and administrative environments in which the method would probably fail and should not be attempted. For the Keller Plan can fail and fail hard. On the other hand, there are many talented teachers in good position from which to offer a Keller course who shrink from it for fear of phantom difficulties. These objectives are discussed as below[6].

(*i*) *Mastery is not the object of the course:* There are courses whose object is to provide an experience, not to master a subject matter. Such a course can have great value in promoting the personal growth of a student through seminar-like encounters with other students and a wise instructor. Science courses in which students hear how it was to discover a new element or find a new effect or influence a government policy have no concept of mastery as a goal. Grades and examinations seem irrelevant to such courses, and there is no possibility of or motive for using the Keller Plan to teach them.

(*ii*) *The subject changes too fast:* If the course's content cannot be predicted five months in advance, then it is impossible to plan a coherent course and prepare good study guides.

(*iii*) *There are 500 students, no help and no time off to prepare materials:* Clearly a contraindication; it is advised to start with a class of twenty, recruit two tutors, and allow a month to prepare materials. Later, one can be more ambitious, but probably never can 500 students be adequately taught by one man.

(*iv*) *Many students cannot read, at least not well enough to do without lectures*: In extreme cases, this might be overcome by use of audio-tape or by programmed material written at the proper level. But a standard feature of Keller Plan Courses in highly verbal subjects (as opposed to problem oriented subjects) is a list of study questions in each unit's study guide. The study questions improve the reading performance of most students.

(*v*) *One undergraduate cannot judge proficiency in the subject on the part of another undergraduate:* This is often said, but it is rarely true. The reasons have been discussed in the literature. But there may be cases in which the objection is valid. Pronunciation in a foreign language, protrait painting, creative writing—these may be examples. In these cases, undergraduate tutors cannot be used to personalize the course, and the Keller Plan is inappropriate.

(*vi*) *The administration will not tolerate a large fraction of A's:* If this is because it is planned to inflate the market for academic credit, they have a

good point. If they don't believe that the A's given in this are as good as another teacher's A's the instructor must be prepared to defend the grade assignment. Comparative examination grades have been used for this purpose with good effect. The objection usually doesn't occur until the end of the experimental term, but one should be prepared for it.

(*vii*) *There is objection on principle to specifying detailed objectives in the course:* It is wrong to "teach the test" if the test is only a sample of the behaviour that is expected to be taught. But objectives can usually be stated at a level of abstraction low enough to guide the student's work yet high enough to cover the entire range of the subject matter. The objective can define an infinite class of problems from which one is selected for the test. In verbally-oriented courses, the objectives take the form of study questions, which must be rather numerous to cover the desired ground. In problem-oriented courses, objectives can be stated more compactly.

(*viii*) *Objectives cannot be specified in the course:* It is not always easy. But if examinations and grades are given on any rational basis, objectives can be stated. If the student is supposed to "have a feel for" the political situation in 1770, what would one take as evidence that he has this feel? One can often tease out one's own objectives by such self-questioning.

(*ix*) *The instructor is too soft-hearted to withhold a privilege from a student who has not earned it:* This will give rise to procrastination problems in most cases. For when one gives the student responsibility for setting his own pace and does not provide him incentives for keeping up an acceptable pace, he often chooses to work on more threatening courses no matter how interesting the subject matter is made. Intrinsic motivation is better than punitive deadlines. It is highly desirable to establish special events, lectures, demonstrations, field trips or seminars in your home, which can be "awarded" as enrichment to students who do work hard on your course. This implies that such students who do not work on your course should not be admitted. Hence the need for a slighly hard heart.

(*x*) *The instructor may be satisfied with the present methods and may not be motivated enough to try an alternative system of instruction without substantial reward:* This is a safe reason not to try the Keller Plan. One probably feels satisfied with the kind of job being done. Good teaching is not adequately rewarded in this country and the rewards one can expect are one's own feeling of accomplishment and student's appreciation. It will take extra efforts the first time—one tries the Keller Plan, one's research will probably suffer. No one should be forced to try the Keller Plan, because without one's enthusiastic desire to make it work, it probably would not.

Suggestions for Using the Keller Plan

In a well run Keller Plan course the professor and the students work

harder. There is substantial logistic and administrative load created by the system and the professor who neglects it is headed for a failure. The staff size and logistical problems also set a real limit to the class size. People who use this Plan for the first time may be well advised to try it in a small class without any modifications. There have been many instances where an unwise modification of the Keller Plan resulted in dismal failure of the course. In addition to being the manager of the course, the professor, at least in the first try, could also be one of the tutors. It may be difficult to get senior college students to tutor because of the 'time-table' problems. The 'time-table', however, is institution made and the administration can help the Keller Plan teacher in this respect. In schools senior students could be asked to tutor as part of socially useful productive work. Some tutors may be asked to help prepare course material. Substantial number of stencils, books (if used), file folder, and a filing cabinet are desirable and planning must be done well ahead of time.

Learning Outcomes of Newer Systems of Instruction

Benjamin S. Bloom[7] in his article on 'Mastery Learning' proposes that 95% of the students can learn a subject to a high level of mastery (for example, an A grade) if given sufficient learning time and appropriate types of help. The task of the Keller Plan or any other mastery learning strategy is one of ascertaining what procedures will help particular students effectively learn the subject under considerations.

Some people who have tried the Keller Plan[2,8,9] and published data find an inverted normal distribution of grades: more A's than C's. James A. Kulik and Peter Jaksa[10] in their article 'PSI and other Educational Technologies in College Teaching' have published studies of the Centre for Research on Learning and Teaching, Ann Arbor, Michigan comparing conventional college teaching and the Keller approach. They report that out of a total of 39 studies with final examination as criterion measure 34 (87%) studies show an average of 13% increment in criterion scores with the Keller Plan and 5 (13%) studies show no difference. Another 9 students with retention as criterion measures indicate that all the 9 (100%) show an average of 24% increment in criterion scores with the Keller Plan. Out of nine studies comparing programmed instruction with the traditional system, 3(33%) studies show 5% increment in final examination scores with the programmed instruction and 6 (67%) studies show no difference. It is also reported that out of a total of 5 studies with final examination as criterion measure 2(40%) studies show an average of 4% increment in criterion scores with CAI, and 3 (60%) studies show no difference. They also conducted 24 studies to compare Audio-Tutorial system with the traditional system and found that 9 (38%) studies show, an average of 3% increment in final examination scores with Audio-Tutorial system, 13 (54%) studies show no difference, and 2 (18%) studies favoured the traditional system. Similarly a comparison of the traditional and video system in 10 studies indicate that 2 (20%) studies

show 2 increment in final examination scores with the video system, 7 (70%) studies show no difference, and 1 (10%) studies favoured the traditional system.

When the Keller Plan was tried at I.I.T., Delhi, the author remembered Keller[11] writing "The Student is Always Right", and collected students' responses to questionnaires. The students liked the flexibility of the course and the independence as far as learning was concerned. They liked the evaluation procedures and claimed that what little they had learnt, they know it very well. One student found himself more of a prey to the temptation of not putting in the requisite quanta of work at appropriate intervals. All the students indicated that they would recommend this type of course to other students. Some students suggested that this Plan should be used in more analytic courses, while others mentioned that it was good for all courses.

There are encouraging affective consequences of mastery learning. After having demonstrated mastery of a couple of units, there are profound changes in the student's view of himself. He begins to "like" the subject and is motivated to learn more of it. Mere acknowledgement of mastery of a unit is a reward for the student who consequently becomes more confident of himself and begins to believe in his own competence. These indications of self-development are sources for mental growth.

Conclusions

The Keller system of instruction results in better learning outcomes and is accepted as a viable alternative to the traditional system of instruction in developed countries. In courses where teacher's personality is not an overwhelming factor, Keller Plan is a strong competitor of the traditional system. The Plan is well suited for autonomous institutions like I.I.T's. The affiliated colleges may require some degree of freedom. 'A Case for Autonomy' of such institutions has already been made[12]. With minor modifications, suiting the local conditions, this plan may be tried in other educational institutions. The poor economic conditions and greater struggle for survival, to some extent, self-motivates the students and procrastination may not be a problem for Keller courses alone. A central agency may prepare and distribute the course material to schools and colleges in villages. The shortage of teachers to meet the needs of these institutions could then be made up by senior/faster students who would tutor other student. The dedication of the available teachers would be one of the most crucial factors for the success of the Plan—for Keller Plan courses are successful only if taught properly.[13] It is likely that if several hard working, sincere and enthusiastic teachers try the Keller Plan in India, it may prove to be a viable instructional alternative for our country. In the modern Indian society emphasis is on continual learning throughout life. Mastery learning can give zest to school/college learning and thus help develop a life-long interest in learning.

References

1. This is one of the techniques. For other techniques see R.C. Mehrotra, *J.H.E.* Vol. 1 No. 1 Monsoon 1975.
2. Keller, F.S., J. Appl. Behavior Anal., 1, 78 (1968).
3. The catalogue of PSI courses in psychology, a list of sources for PSI materials, and a bibliography on the method are available from John H. Hess, Jr. PSI clearing house, Eastern Mennonite College, Harrisonburg, Va. USA.
4. Rajeshwar N. Mathur, *American Journal of Physics,* Vol. 46/11, 1101, Nov. 1978.
5. Ben A. Green, *Jr., American Journal of Physics,* Vol. 39/7 764-775, July '71.
6. Ben A. Green, Jr., Paper delivered at the Keller Method Workshop Conference, March 18, 1972, Rice University, Houston, Texas (unpublished).
7. Bloom, B.S., Evaluation Comment, 1, No. 2, *UCLA,* Centre of the Study of Evaluation of Instructional Programme, 1968.
8. Koen, B.V., Eng. Ed. 60, 735 (1970)
9. Mc. Michael, J.S., and Corey, J.R., J. Appl. *Behavior Anal. 2,* 79 (1969).
10. James A. Kulik and Peter Jaksa, *Educational Technology,* September, 1977.
11. Six, N.F., Hall, R.S. and Campbell, P.B., "The Student is Always Right; Keller's Approach" AAPT Announcer II 12; May 1972.
12. Kamat, R.V., *J.H.E.* Vol. 1 No. 1 Monsoon, 1975.
13. Alex J. Dessler and Raymond J. Talbot, Jr., *American Journal of Physics,* Vol. 45/8, 770, August 1977.

APPENDIX

SAMPLE
COURSE POLICY
MATH 111 K

General Information

This course in "Methods in Contemporary Mathematics" is taught at the same level as the traditional Math 111 course. The textbook used will be "Topics in Contemporary Math" by Moore and Little. This textbook may be purchased from the bookstore. First 9 chapters will be covered in this Semester.

The instructional system used in this section is very different, however, from that in the traditional course. The contents of this course are divided into 14 units. For each unit you will get the "so-called" study guide which contains an introduction to the unit, objectives of the unit, suggested procedure for achieving the objectives, notes and comments, etc. Following are the main features (with comments and advise) of this course.

(i) *Self-paced feature:* You progress through this course at a speed commensurate with your ability and other demands upon your time. You are encouraged to establish a work schedule for yourself which insures that you make steady progress through the course. You are strongly urged to take advantage of this feature by taking Math. out of your way earlier. If you work fast you may finish the course earlier by completing all the units and taking an early final examination. Some students, however, neglect their work and fall behind. It is dangerous to fall behind and all too easy to do so. The students who neglect their work and do not follow a steady work schedule are the ones who flunk a self-paced course.

(ii) *Mastery feature:* You will be allowed to go to new material only after you have demonstrated mastery of that preceded. You will study to achieve the objectives stated explicitly in the study guide using the recommended procedure and the tutor's help, if needed.

(iii) *Personalized instruction feature:* You will be assigned to a tutor who will help you through this course on individual basis. Your tutor is a second year student who is chosen on the recommendation of the Math-Science faculty. He/She is tutoring on a voluntary basis, because he/she is interested in participating in this new system of instruction. A good relationship with your tutor is essential to doing well in this course and enjoying it. He/She is there to help you. Tutors are only human stuff. If you and he/she disagree on a grade, you should feel free to appeal to the instructor. Also if you and your tutor just do not get along well in general, ask your instructor to assign you to a different tutor.

(iv) *Self study:* No formal lecture feature—the lectures, if given, will only be useful in getting you more interested in Mathematics (or in entertaining you) and will not help you in mastering the contents of the course material. The initiative in this course is yours. You will work yourself from the textbook and the study guide. Your tutor, of course, will be there to help you. Information about the lectures will be posted on the bulletin board in Rm S-119. You are expected to check the bulletin board at least once a week for this and other announcements and corrections.

(v) *Instant reward feature:* The unit tests are graded immediately after you have taken them and in your presence. If a question is not answered to the tutor's satisfaction you may be asked to explain what you wrote and what you meant. If you verbally demonstrate complete understanding of a problem you may get a pass on it in spite of the fact that you may have written a wrong answer on it.

The mechanics of the course go as follows:

1. Get your next unit's study guide from your tutor. Your task is to achieve the objectives states in the study guide. You may follow the recommended procedure towards this end. You can work anywhere including the rooms S-117 and S-119 (during class hours).
2. When you feel you have mastered the material of a unit, you may ask your tutor for a test. Sit in the classroom to write out your answers (closed book, of course). When you have finished, take your answer sheet to your tutor.
3. Your tutor will grade your test immediately and give you feedback on your answers. He may want to question you further, perhaps to clarify what you have written. The tutor keeps your answer sheet for review by the instrutctor at a later time. All of your tests and answer sheets are kept in a folder which you may see before taking another test on a unit.
4. If you passed, ask your tutor for the next unit's study guide. If you did not pass, your tutor will note the time. Thirty minutes later you are entitled to take a retest on the unit. Your grade is not effected by failing anyone of these unit tests.

Grading Policy

There is no penalty for errors on the unit tests. You may take and need four or more tries to learn a unit; once learned that is all that counts. Your grade for the course depends on how many units you have passed as follows:

A	14
B	12
C	10
D	8
F	Less than 8
Unit grades count	75%
Final	25%

Gripes About the Course

We encourage feedbacks....to the point where if you don't willingly provide it, we might politely try to coax it out of you. Always feel free to approach your instructor with comments, criticisms, etc. concerning any aspects of the course.

INDIA INTERNATIONAL CENTRE
QUARTERLY

Volume 6 **January 1979** **Number 1**

Dissident Thoughts on Economic Progress	...	*J.K. Galbraith*
Contradictions of Socialism and Capitalism	...	*Bertram M. Gross*
Managing Land and Water Resources	...	*B.B. Vohra*
Decline of British Colonial Power	...	*P.J. Marshall*
NEIO: Five Views		
Realistic Targets for the Eighties	...	*Estefania Aldaba-Lim*
Reaching the Deprived Child	...	*M.M. Rajendran*
Book Reviews		

Subscription (4 issues per annum) :

Inland			*Overseas*
One year	Rs. 20	One year	£ 5
Two years	Rs. 35	Surface Mail	$ 9
Three years	Rs. 50	One year	£ 7
		Air Mail	$ 12
Single copy	Rs. 5		

Please address your enquiries to :
The Assistant Editor
India International Centre
40 Lodi Estate
New Delhi 110 003

ARTHA VIJNANA
Quarterly Journal of the Gokhale Institute of Politics & Economics

Vol. 21 No. 1 CONTENTS March 1979

Some Models In Use For Extrapolation of IUD Retention Rates: A Statistical Evaluation	*K. Aruna Rao and M.V. Sholapurkar*
Compulsion in Family Planning: some Fundamental Considerations	*Vasant P. Pethe*
Nicholas Georgescu-Roegen and the Methodology of Economic Science	*K.K. Das Gupta*
Changes in Input-Output Coefficients and their Impact on Production Levels	*P. Uenkatramaiah and Latika Argada*
An Appraisal of the Pilot Project Blocks Scheme Implemented In Maharashtra During Rabi Season 1975-76	*B.K. Chougule and V.G. Sharma*
Notes and Memoranda	
Mechanics of Consumer Price Index Nos. on Corrective Action	*R.N. Mukherjee*
Book Reviews	

Subscription Rates (inclusive of postage)

Annual: Rs. 30: $ 10; £ 5. Single issue: Rs. 10; $ 3; £ 1.50

Please address all correspondence relating to academic matters: (e.g., articles, book reviews etc.) to The Managing Director, Artha Vijnana and other correspondence (e.g., subscription etc.) to the Editorial Assistant, Artha Vijnana, Gokhale Institute of Politics and Economics, Pune 411 004 (India).

Journal of Higher Education
Vol. 4 No. 3 Spring 1979

Continuing and Non-formal Education

Universities' Introduction with and Contribution to Continuing Education

M.N. PALSANE

For some time discussions have been going on to define clearly the concepts of adult education, continuing education and other related terms. Continuing education appears a more comprehensive term covering the educational needs of sub-adults which are not normally met in the routine school or college setting. Often it is said that adult education covers literacy training which does not fall under continuing education. Continuing education is supposed to imply continuation beyond some basic education and literacy training is considered an indispensable component of this basic level education. However, it is possible to hypothesize an individual learner who is "educated" and "trained" in the strictest cultural sense and yet is "illiterate". It is not necessary to confine the educational activity to schools alone. The family, the society and the whole environment for that matter are educating the individual. Just as literacy in foreign language is covered in a continuation programme, literacy in one's own tongue also can be a later stage of education, though the present system has invariably adopted it as a starting point. There is no reason why its order cannot be changed. If this is accepted, continuing education is a preferable term for adult education. This is especially useful for the schools and colleges which have to deal with the sub-adult groups also.

This distinction is more of theoretical interest and not absolutely essential to undertaking continuing education programmes in any university. Some more important and practical issues in this connection are discussed in this paper. They are:

(1) Need for professionalisation of higher education, and adoption of

continuing education to enhance professionalisation within the folds of a university;
(2) Continuing education as extension function;
(3) Continuing education as an academic discipline; and
(4) Continuing education point of view as applied to the existing university system.

Higher Education Needs to be Professionalized

Philosophical orientation or more specifically goal orientation is conspicuously absent from the area of higher education and is apparent at all of its levels. The whole system is in a state of anomie for a long time. At least after Independence, goal orientation should have been specifically developed in response to the major changes in the country's needs; but this did not happen. Any change in the system is resisted and any change pushed by force of authority is accepted challenging the wit of all the intelligentia and rationalists who conglomerate under the roof of higher education. Resistence to change in higher education is more often a matter of poor ideological orientation rather than that of an ideological conflict. No wonder that continuing education is slow to take roots in the rigid framework of higher education. It is considered an appendix or one more department. This is a mistake. It is a much needed re-orientation to the concept of higher education institutions. It is a direction in which a fixed-course-institution, be it a college or a university is led into an open university system. This is like replacing a digital calculator with four basic arithmetic functions by a forth generation computer adaptable to varied and complex operations a creative mind can imagine of. That's the range of possibility with continuing education also.

Professionalism in higher education though very much desired is not an easy task. Several activities and programmes are necessary before a gradual development of professionalism can take place in this field. The most basic requirement of professional development is organising professional training itself. In addition to the Masters and Doctoral degrees in basic disciplines, teachers and educators need to have training in professional higher education. Pending organisation of such programmes on a large scale and involving the majority of teachers in the field of higher education in such programmes, some intermediate shortcut steps may be necessary. Each college, department or other institution connected with the university may hold seminars, symposia, discussions, etc. on the general theme of higher education as well as its more specific aspects like goals of higher education, teaching methodologies, examinations, student services, and so on. This will automatically enliven them to the problem of relevance of higher education and this will lead to the discussion of themes related to community needs especially in a developing country like ours. The discussion of community development and the role of education in it will invariably lead to the problem of adult education of the vast illiterate masses of the rural and urban areas. The entire process of self-education would lead to healthy integration of ideas related to education

and community development.

Another activity that can lead to development of professionalism would be to take more seriously the various resolutions passed by professional educational bodies such as University Grants Commission, Indian Universities Association on Continuing Education, Association of Indian Universities, Joint Board of Vice-Chancellors, etc. This should be given due importance by the various athorities in the universities, colleges and departments and they should bring about academic discussions of these from time to time. Every attempt should be made to evaluate the value of such resolutions and if considered worthwhile a majority of these be implemented as early as possible. The situation at present is mostly dismal in this regard. Many such recommendations are simply read, recorded, filed or at the most "generally agreed with in principle". Inaction in this regard is most dangerous. This gives an impression of progress which is illusory. More than that, this undermines the very basic professional values for which these institutions stand.

Further development of professionalism requires a more organised and much skilled educational journalism to develop awareness of the professional issues in the field of higher education. The popular newspapers, the weeklies and other periodicals need to have professionally trained staff to handle educational issues and there should be regular features emphasizing and discussing the various aspects of education from time to time. The professionals as well as the public need this badly. The universities and colleges can organise a systematic programme utilising this medium to educate themselves as well as the community in this regard.

The universities spend enough of their resources on various seminars, workshops, lecture series, conferences, visiting lecturers and so on. At the earliest juncture, let every university declare a year as a "Professionalisation Year". All their resources may be diverted to celebrate the year. By celebration is meant developing the needed understanding, attitudes, values as well as the professional skills of framing objectives, framing curricula, designing teaching strategies, undertaking evaluations, etc. If the universities have started thinking that such matters can be taught to others, let these be first taught to its own personnel. These should cover, first of all, the teachers in the colleges and university departments, principals, heads of the colleges and other institutions, non-teaching staff, members of the various university bodies and authorities. If this could be accomplished, the people in this system may start generating new ideas, new programmes, new experiments. A questionnaire once sent to invite suggestions on these matters was mostly not responded. Few did but reflected a total lack of imagination in this regard.

Continuing Education as Extension Education

Continuing education can most easily be adopted as an extension function in any institution of higher learning. There is at present some confusion among the university authorities on this issue. Whether continuing education is just like any other academic department or whether it is merely a coordi-

nating agency for the extension programmes of all the departments and the colleges? The teaching, research and extension are three basic functions for any academic department or institution, be it continuing education or psychology. How much of each is emphasized and carried out is a different matter. However, the experience at present is that expert academic personnel in the field of continuing education are few. This is because the subject is new and there are only one or two universities undertaking substantial academic training programmes in this field. Agricultural universities are better off in this respect. Most of them have it as a subject at the post-graduate level. Till such time that academically trained personnel are not available, extension function of continuing education can be operated with the minimum of personnel and training that may be available to them one way or the other. There is, however, a great necessity to enhance the professional competence of these workers through periodical in-service-training—continuing education applied to continuing education workers themselves. Through a central agency of extension education work in the university, a network spread over all the academic institutions can be developed. This will cover all the faculties, colleges, departments and institutions. The universities can make some extension education work obligatory to every teacher and also to a student. This is not only possible but is likely to have some tangible impact on this vast national programme of adult education. The teachers and students of universities are pre-eminently suited to do community education work. All of them come from variety of places and backgrounds. Off and on they go back to these places. It is very easy for them to acquire some knowledge at one end and transmit it to the other (community) without very much extra effort. Various media can be used for this purpose. There could be formal lectures. There could be informal discussions; newspapers, magazines and other possible media can also be utilised. Even if a student takes the responsibility of educating his own family, it can be a significant contribution.

For organising extension work in every institution there has to be some machinery. A cell of adult education is recommended for this purpose. This may be organised along the lines of a voluntary social work organisation and should involve interested teachers and students. Whatever community education work is necessary should be planned and looked after by this agency. In order to clarify the concept of community education work a number of activities may be undertaken within an institution just as some activities have been suggested for developing professionalism in higher education. In the same way, awareness about the needs for community education or adult education can be created among the students and the teachers of any institution. Even continuing education now is developing into a professional field and the educational institutions have to be oriented toward this. The institutions should develop good libraries of literature on professional education, higher education and continuing education so that they can keep up with the professional thinking in these fields from time to time. More specific activities for actively developing the spirit of continuing education and professionalism can be suggested as follows:

Each college may bring out its magazine, bulletin or college annual on the theme of community education and community development. Articles on actual programmes and their case studies, proposed programmes of adult education, educational needs of the community, role of different agencies in adult education, etc. can be specifically written in the local context. Creative literary writing may also be encouraged along the same theme. Photographs, humour, advertisements, etc. can further highlight or spotlight distinctive features of the rural problems.

NSS may be made obligatory to all students. Without depending upon grants from outside sources for the NSS activities, this movement be developed and managed with voluntary and local expertise. This will enable every student to participate. Programmes along the lines of the Centre of Continuing Education (University of Poona) engaging rural students in the rural education work may not require much investment or expenditure. Basic literature may be developed in the form of handbooks for "rural educators" on contents such as agriculture, family and social life, health and nutrition, village crafts as well as on the instructional methods and media. Popular writing in all the subjects may be encouraged. This may be put in the form of booklets or through articles in popular magazines or newspapers. Longer themes can be covered in special issues or they can be serialised. Simple annotated bibliographies may be prepared on the themes and topics of significance to the rural/urban/community studies and development. These may cover professional as well as popular literature. If this could be classified in terms of its use to different audiences, it would be much more useful. This can be prepared by the students as part of their assignments or a part of obligatory rural education or NSS activity. Teachers could be given credit for encouraging and guiding such efforts.

Community adult education is a vast field and the university and the institutions connected with it are a small part of the total educational structure. It is, therefore, necessary that the universities and colleges assume a leadership role in planning, coordinating and organising the extension activities of the several agencies. The major agencies likely to be in the field are the government departments of education, zilla parishads, primary and secondary schools, mass media, voluntary organisations, other departments of the government like agriculture, health, cooperation, village industries, etc. The universities and colleges may undertake to start a dialogue with all such agencies working in their neighbourhood and explore the ways and means of contributing their share to the educational effort for the vast illiterate or miseducated masses.

Continuing Education as an Academic Discipline

Some universities have already started continuing education as academic departments. It should be interesting to listen to their experiences. We think that continuing education can best function as a social-science based inter-disciplinary school. The University Grants Commission had appointed a

task force for developing continuing education as an academic discipline and its report recommends the term "Andragogy" for this subject. The various social sciences like Economics, Philosophy, Sociology, Psychology, Public Administration, Anthropology, etc. are at the base of this new subject. Just as schools of management and social work are organised, school of andragogy can be founded with the expert assistance from these basic disciplines. With some marginal inputs, a beginning can be made in most of the universities where these social science departments exist. In practical terms, however, most of the social science departments are so small that they do not possess the "spare capacity" to contribute their share to the "school". The UGC may consider granting a post each to these basic disciplines especially for continuing education specialisation. Nothing prevents a university from undertaking research in continuing education, and the doctoral or M.Phil. programmes in the above social sciences can easily encourage research in this field. Formal teaching in continuing education may have to wait for a while till the disciplines as well as the resources get organized. Non-formal programmes can, however, be conducted from time to time, in the form of institutes. We have an idea for a long time but it is for the UGC to think of it seriously. We may undertake to run a correspondence-cum-contact programme to train continuing education personnel from the various universities. We may require a year to collect all the library and reference materials for this. During the second year, an expert from each of the basic social science disciplines may spend a year at this university developing the content in andragogy as well as looking after the correspondence instruction in his part of the subject. He will also teach at the contact programme and also guide the project and field work related to his speciality. M.Phil. in continuing education can be organised in this way on an experimental basis. The UGC will have to support all the expenses on this on a 100% basis. Developing continuing education as an academic discipline seems difficult through any other mode. The mistake that "education" (as a discipline) made in isolating itself from its basic foundation disciplines should not be repeated in continuing education. We know the costs too well. Either on ad hoc basis or on a permanent one, continuing education should remain an interdisciplinary school. Beginning the ad hoc or non-formal way (correspondence-cum-contact) seems practical step to orient people in several universities at a time. This can be made a permanent feature of any university in course of time by involving the social science departments and by giving them a post each especially for continuing education specialisation.

Continuing Education Point of View as Applied to the Existing System

The existing system of formal education can be better spoken of as system for discontinuing education rather than continuing education. The existing rules and regulations display an utter disregard for the enthusiasm of the individual learner. Geographical location, language or subjects and their combinations, inability to attend college on full-time basis and even having

obtained degree already can become an obstacle to further learning. The M.A. of our university could not take an additional paper for further specialisation five years back. It took three years to change rules and permit such cases. The present system is full of such rules. First of all it is easy for administrators to work with such rules. Secondly if the times when these rules were first framed are considered it is understandable why they are so. What is not understandable however is why they have not changed with times. The Joint Board of Vice-Chancellors in the Maharashtra State agreed to remove such restrictive practices and have passed a resolution to that effect. In fact every university can set up a broad-based committee to function permanently and suggest from time to time the removal of obstacles to further learning and to initiate proposals to make the learning system more flexible and more open. The decision-making in the universities needs to be decentralised to expedite this process. Change in rules, structures or programmes is such a long process that it takes years. If the process is decentralised by delegating autonomy at the peripheral and operational stage, change as well as implementation will become more common and the universities may get out of the present straight jacket rigid formats.

Custom made programmes may increase in response to learners' needs and ad hoc non-formal courses may be run from time to time. The concept of autonomy can be reinterpreted. If it is difficult to choose institutions for the purposes of autonomy, some academic autonomy can be given to every institution. The earlier this is done the better. In doing this the goal of every institution of higher learning should be to march toward the concept of an open university. Every university should become an open university.

For bringing about needed changes in the present system, the following suggestions may be considered:

'Rural/urban/community studies' courses may be introduced at the undergraduate level as either compulsory or optional. This may be designed as intensive interdisciplinary studies courses. Adequate course materials be developed. Community work/education be made an obligatory practicum of such courses. The concept of teaching everything in the classroom may be modified. Some course work in this area may be left to the students. It may be covered by any of the following methods: correspondence, assignments, self-study, radio talks, etc. This entails a combination of internal and external candidature in the same student. This should be conceivable.

The educational institutions may allow interested and enthusiastic learners to the ongoing courses if accommodation is no problem. This may prove good in many ways: knowledge spreads; there is better feedback; worthwhile interaction takes place; the students may take up more active role in the course of time.

Colleges and departments can offer part-time, evening, week-end or remedial instruction to special groups like external students or backward students. Instruction in extra-curricular, cultural or personality development matters can also be organised outside the core curricular limits—if these matters cannot be incorporated in the core curriculum on some orthodox

academic grounds.

The libraries are the most common centres of continuing education. All institutions should open up their libraries to everyone around. They also need to equip them in response to local needs. There is a tendency to avoid purchasing books in subjects which are not taught. This is too dangerous. If you do not teach at least allow people to learn on their own. The libraries be operated as social service units. The institutions should try to go out to the community with programmes like study circles, book reviews, publicity to new arrivals in libraries, and promote the use of library. In maximum of 10 years, all that is in the library may well be either a dead stock or historical documents. Let it be used before it turns into material of archiological value.

A survey of the obstacles encountered by the students in continuing education can be made either by examining "turned down" applications for "special cases" or "concessions" or by inviting people through mass media to report their difficulties to a committee. It is likely to be discovered that many of the difficulties can be removed by suitably modifying the rules without sacrificing the standards.

Change from one faculty to another and offering courses across faculties is not easy at present in many universities. This is a highly desirable practice common in most of the western universities as well as in some of the more modern Indian ones. Flexibility can be brought about by introducing the concept of prerequisites for specific courses and through the system of auditing courses.

Each Board of Studies may be asked especially to innovate specific purpose short courses leading to certificates and diplomas besides their present liberal education programmes. Continuing education programmes can be credit programmes leading to certificates, diplomas and degrees. The Boards of Studies may also be directed to plan for some interdisciplinary courses by forming interdisciplinary boards. Though there is a provision for this in the university acts of Maharashtra, there appears little activity in this respect. Poona University has launched upon the programme of interdisciplinary schools. It is expected that with the implementation of this concept interdisciplinary academic collaborations would increase to the benefit of students as well as teachers.

Most of the present courses like M.A. (Psychology), Bachelor of Library Science, Bachelor of Social Work, Master of Social Work, Bachelor of Journalism, etc. which are not normally available to the external students because of the practical contents, can be opened to them. As far as their practical part is concerned, it may be covered through properly designed contact programmes for optimum necessary duration.

There are very rigid rules for recognition as teachers at the various levels of higher education. In order to bring varied and practical expertise in contact with the students these have to be made flexible. This would not only increase the interaction between the theoretician and the practitioner for mutual cooperation in problem solving, but also open up possibilities of innovations in course design and curriculum. The concept of a part-time teacher may be

strengthened as much as possible.

The external student needs to be encouraged. All cannot go to institutions. Nor can all existing institutions accommodate all the students. Our limited resources and unlimited needs make it imperative that we regard the external student with greater respect. He is fighting against greater odds. Continuing education can go a long way in meeting many of the demands of the external students and in this process it will integrate itself wholesomely with the formal educational programmes of today. Distinctions between morning, day, evening or night colleges may be abandoned in favour of more adequate common academic criteria. This will help in encouraging the concept of part-time student which may be intermediate concept between the internal and the external student. Independent learning habits and self-study which are highly desirable at the stage of higher education are better achieved through an external candidature than a spoon feeding instructional procedure in vogue today. Even the motivation is of a superior type and level in case of the external students. Under the circumstances, the universities instead of looking down upon the external students in terms of academic products or assigning them second class citizenship status should consider giving them more positive support and encouragement through a system of students aid, scholarships, prizes, library facilities, distant instructional aids, etc.

Conclusion

In summary, it may be said that there is great scope for introduction of changes in the present system of higher education. Continuing education point of view is one of the most apt approach to this process of change. It provides goal as well as strategy for the present stagnant system. Integration of formal as well as non-formal programmes at the level of higher education need to be institutionalised through the present-day universities and colleges. This may lead to a built-in mechanism for not only the avoidance of stagnancy in future, but also for the introduction of greater adaptiveness in the system. In this sense, continuing education in any system of higher education is not merely an addition of a department, but an awakening to its true role and responsibility to the society at large.

UNIVERSITY ADMINISTRATION

(A Biannual Journal on Problems of Higher Education and Governance of Universities)

The *Journal* focusses attention on administration and management of collegiate and University system.

Select contents of Nos. 1 and 2 of Volume IV

(Special Number on the role and Responsibilities of Laymen in The Governance of Universities)

1. University Governance: Academic versus Non-Academic — *Amrik Singh*
2. Participation of Non-Teachers in University Administration — *Gautam Mathur*
3. Laymen and University Governance — *Fred Harvy Harrington*
4. Role Perception by Member of University Governing Bodies — *Robert Mc Caig*
5. Lay Neighbourhood — *S. Adinarayan*
6. The Role of Laymen in University Administration — *D.C. Joshi*
7. University Administration in India—A Case for Lay Governing Boards — *Y. Raghaviah & K.V. Srinivasan*
8. Student Participation in University Governance—The European Experience

Select contents of No. 1 of Volume VI

1. University in Business — *A special Reportage by the Chief Editor*
2. On the Reliability of Rating in Interviews
3. Perceptions of a Group of Culturally Different, Gifted and Creative Students Toward their Teachers — *Joseph P. Cangemi*
4. Higher Education; Problem of Enrolment — *D.S. Tripathi & S. Singh*
5. The Commonwealth Council of Educational Administration — *H.T.B. Harris*
6. Study Service—An Idea Whose Time has Come — *Diana Fussell & Andrew Quarnby*

Editorial and Business Office:

OUB/L29 University Campus, Osmania University
Hyderabad-7 Andhra Pradesh,
INDIA.

Annual Institutional Subscription	Rs. 40/-	Foreign Institutional Subscription £ 5 or $ 10
Individual Subscription	Rs. 20/-	

Single Copy of Rs. 10/-

Journal of Higher Education
Vol. 4 No. 3 Spring 1979

University Education and Rural Development

K. G. GURUMURTHY

This paper aims to discuss the role of university education in rural development. Its focus is on such issues like: What is wrong with our rural society? Why has rural development become essential? What is the type of development needed? What is wrong with the existing agencies and the development policies? Do the universities have the status, the authority, the skill and the personnel to undertake it? Taking these factors into consideration an attempt is made here to provide a few concrete suggestions to show how the universities could help in the development of rural society in India.

Background

Education has definite aims and objectives in all the societies and at all times. It is more so in the case of simple societies like the rural and the tribal. By educating the youth these societies prepare their future citizens. Once the imparting of knowledge was over, the older generation in these societies handed over the tasks of protection, feeding and religious duties to the younger generation, with a least hesitation. The old believed that the youth could do this with confidence as the education given to them was practical and perfect. Moreover, the parents and elders of the society themselves had personally trained and approved the skill of the youth; with great responsibility and sincerity.

The simple societies which were away from outside influence, had caste and clan based economic activity. In most of the cases there was exchange of commodities and services. Owing to its simplicity, the societal demands were also simple and few. On the other hand these societies also had the feeling that they were superior to others in terms of their food, education, religion, training, moral values etc. Their rituals, customs and manners

also had a significant place in their lives. This pride in them had not only barred them from accepting any thing from outside but also from abandoning things of their own. Owing to this there was very little scope for new ideas to enter into their lives and living and change the society.

The youth, in simple societies, never felt that they were undergoing schooling. There was also no barrior or gap between the teacher and the taught on one hand and the knowledge they gained, including their life needs on the other. The subjects taught were directly relevant to the life of the people and so the 'students' had interest and enthusiasm in learning. Moreover education was practical oriented and the students got its benefits immediately. This immediate reward they got, for the trouble taken in learning, encouraged them to apply their mind and heart to persue their studies further. This practical utility of the knowledge never made them feel that they are dependents and burden on the parents or society. On the other hand by teaching their youth the family and the society got immediate benefits since they started contributing to the family and social economy. These factors had made them develop a feeling that their education like other things, was also good. So their educated members were never considered useless or waste and burden on the society.

Impact of Formal Education

Coming into contact with the state on a wider basis and with the introduction of formal education, many problems arouse in simple societies. Education has made the rural youth to think that they are in some ways different from the rural society. This is because the teacher who comes to teach in village school is, by and large, an out-sider, with different value system and very often with urban values. In attending schools the rural children stay away from their parents and familial influences, for a longer period of time. Their tendency to express any rural-mannerism, speech, dress etc., is discouraged by the teacher. Thus those who discord most of rural culture, are considered the 'cultured' and ideal of the school. Such persons also get status in the society. In this way the rural children are taught to consider their own culture and life style as an inferior one. Further, the rural children, after their schooling in the village are sent to town for further education and thus they are put in the midst of the new urban environment. Now their main aim is to ape the town breed. This makes them to drop or disrespect the manners, customs, beliefs and values of their own people, which gives them a feeling of backwardness. So later in life their stay in the villages will not be happy; as a result of this they are compelled to take-up jobs in city and stay away. This results in the loss of the educated youth to the villages to which they really belong.

On the other hand the village youths who could not secure jobs or refused by the city, return home. This failure leaves a deep scar on their hearts and so they determine to educate at least their children well and send them away from the village. So they give top priority and attention

to the education of their children and also keep them away from domestic duties and familial occupation, to see that they look urban and town breed in their way of life. They prefer to give their daughters in marriages to persons who are employed and settled in cities. In this way though they live in villages and cultivate land, they never seem to love their occupation and stay in the village, and always think about the better prospects of life in cities. Thus many lead a life different from other villagers by importing city ideas and goods into villages.

The government policy towards the betterment of rural society, is also not favourable to rural folk. Apart from their exploitation they are also denied of benefits which are due to them from the society at large. One can see that only the commercial and industrial issues and items of the society are given more attention than the rural and agrarian ones. The villages are still away from city without any transport and communication facilities. They also have very little significance in terms of revenue and political support to the city dwellers. All these factors have led to the neglect of villages and their development. Several attempts have been made to understand and improve the rural society since the days of British rule in India. They have involved the use of such phrases as rural development, rural reconstruction and so on. But all these are half-hearted attempts and are always undertaken keeping an eye on the urban benefits rather than the villages.

Village Condition—Past and Present

Now we can discuss about the situation in the past and what really happened to the villages. Henry Main (1871), Bedan Powell (1896) and others were of the opinion that the Indian villages of the past were self-sufficient, independent republics. But we know that they were self-sufficient only in their day-to-day requirements because their production and consumption were equal. However, for bullocks, brides, new ideas, religious activities, etc., they depended on outsiders. In due course of time such haply organized and functioning rural communities crumbled after coming in contact with outside world and biteing the evils of the money market.

In the past the economic situation of the rural society was different. Each village had its own craft castes and they produced all that the villages needed. In other words what they needed was produced within the village and that was consumed in the village itself. Things extra were distributed among their traditional clientele. Owing to lack of monetary economy and market; together with the caste and community obligations, there was no question of un-employment or lack of demand for commodities. Now with the loss of traditional occupations, people could take-up the occupations of their choice. With the coming of monetary economy and market, one could also produce more for sale in the market; thus going outside the village and traditional links. This link with the market not only exploited the rural artisan but also the rural society at large. To meet this demand the rural people began to sell

their produce without keeping an eye on the rural demands. Owing to this the inter-dependance among the different castes in a village, was lost. The unemployed ones begin to move out of villages looking for new sources to earn a living—jobs in government and commercial agencies in urban centres.

On the psychological side, the independent and dignified jobs in rural area were considered inferior and the low paid and subordinate positions in government and commercial agencies, became prestigious. In this way the traditional crafts and skills were lost. By joining the money market the village society became not only the loser but also the inferior in terms of its craftsmenship and marketing skill. Thus, caught in the evil game, the villagers became helpless victims to money lenders, commercial agents, marketing officials and such other swindlers. On the other hand the raw material produced by the rural folk never brought him profit. Similarly, the commodities he bought were always costly. Both these factors show that he never controlled the market and thus was always at loss.

In terms of administration, in the past, the Indian villages were independent without any external control. The traditional or charismatic leaders like landlords, priests, traditional village officials under traditional village panchayat, such as *Pancharu, Navanayakaru, Barabaluta* etc., not only maintained law and order situation well but also looked after the welfare of the poor and the weak in the village (Gurumurthy, 1976: 145-153). In this capacity they settled disputes, led people during socio-religious activities and crises. They also undertook developmental activities in the village. They did these as a moral obligation and the villagers also followed them faithfully in all respects. Without adequate means for living and mobility, the villages were closed systems. The authority and powers of the traditional leaders were accepted without any opposition. As a result the village administration was smooth and all developmental activities were undertaken as moral obligations towards the community. This type of a homogenity was disturbed with the introduction of outside rule. With this a parallel leadership structure, the official leadership of the *Patel* and the Village Accountant and later the village statutary panchayats, came into existence. These agencies derived their authority and power from an agency outside the village, the state, and received directions from outside and so became less powerful and less effective (Jahagirdar, 1977). On the other hand they split the village leadership into two groups—formal and informal, weakening the latter, very much. With this the village communities not only lost their autonomy but also the incentive and vitality to develop.

The establishment of new linkages with the larger political and administrative body—the state, the villages were brought directly under the state administration. With this they lost their political independance and the village panchayats became an insignificant part of the state administrative mechinary. This link-up ultimately led to loss of leadership and incentive for development and increased the dependance on outsiders and so on.

The informal leaders were only a little active in ritual and social spheres. But when the democratic system of self rule was introduced there came a

check on the traditional and informal leadership too, in the village. New education, change of occupations, monetary economy, employment outside the village, etc., brought enlightenment among the villagers and thus weakend the status and powers of traditional leaders further. Added to this were the founding of such state agencies as police force and law courts, which took away the police and judicial powers from the village leaders. With the coming of democratic set-up and adult franchise, the individual got much freedom and also privileges. These again took away the powers, status, authority and roles of the traditional leaders. On the other hand the formal leadership which was linked with the taluka and district political leadership, was controlled through legislations, advise, grants, auditing, inspection etc. So through the years the Indian villages became ineffective parts of state administration and lost opportunities to function towards better community living. So they started depending on outside agencies for their developmental needs. But what they got by this was worst. In the name of leadership the villagers were involved in local party politics. The innocent peasant was caught in prestige politics and lost his time, money and mental peace. On the developmental side the programmes given by the higher-ups than the felt needs of the villagers, were implemented.

In terms of ritual and spiritual leadership too the villages lost their lead to the outside agencies such as *Maths,* shrines, caste and religious associations etc. In the past, when the village folk were not exposed to the outside world and organized religious order, they had their own village level folk religious activities, festivals and rituals. In most of the cases the folks feared their deities and performed ritual activities from time to time and offered food etc., to them. Out of fear of the supernatural they also maintained good moral conduct. This brought mechanical unity among them and made them to undertake different ritual activities like fairs, festivals etc., on co-operative basis. Owing to the influence of organized religion, modern education., etc., now the villagers have very nearly stopped celebrating these and so have lost the unity (*cf.* Gurumurthy, 1973, 111-120). On the other hand now they have links with outside agencies and derive their moral order and inspiration from them. So they always look outside the village for help and the indigenous sources are thus loosing their influences. All these factors led to the degeneration and loss of vitality in village community. The rural agencies lost their power and roles to outside agencies which inturn had no real interest to help them.

It is natural that societies change as they come in contact with the outside world and get new and progressive ideas; but in their own phase. When different sections of a society fail to cope with the change many problems will arise. When the Indian rural communities, with simple socio-political systems, came in contact with the outside world they failed to move along with the current. One cannot hope on the other hand to put the entire society on the track of change. But as far as possible it becomes essential for the society at large to take all its components into its orbit while changing. For some reason if this fails to happen the lagging part should be dealt with

properly or else it may suffer still further. Today, what has happened to the Indian villages is that they are not able to cope with the money market and mobility which came after it. The rural people, who have lost their vitality, have also lost their will to stay in village and take up various developments. This situation should be changed. They should be made to adjust to the change and thus join the mainstream of change with all the vigour.

Revamping of Activities

Many rural reconstruction activities have been undertaken after independance of India, through community development and other directed programmes. But our five year plans and thousands of crores of rupees spent on rural development, have not been able to revitalise our villages. This is because of lack of response from the villagers on one hand and the insincere efforts by the government on the other. Lack of response from the villagers is due to socio-psychological and political factors. First, the urge for development should come from within. But through the centuries of exploitation by the outsiders and privileged persons in the village like the landlords, village officials, etc., the rural folk have lost it. He also lost his incentive to work hard since the fruits of his labour went to others. Discouragement, factionalism, ignorance about better standard of living, rivalry, jealousy, dependency on outsiders for basic needs etc., have finally removed the urge in him to develop.

Secondly, the attitude of the government officials and agencies of directed change towards the villagers, should also change. In the past the governments and their agents went to the villages to trouble the people—to collect tax or fine, and arrest them. Decades of this trechary has taught the villagers to avoid the government agencies. Now this type of an attitude has to be changed soon in order that they should learn to look upon the government officials as their friends, advisers, helpers, guardians and so on. In some cases various government officials came to villages on their own asking them to take their help and advise. This has created suspicion in the minds of the villagers and so they refused their help thinking that must be some type of a new trick. So efforts should be made to change the attitude of the villagers towards the government.

It is also true that many of the government officials think that the villagers are silly, backward and they cannot understand their problems. We should know that the rural communities have all the qualities and resources needed for development. But centuries of exploitation and dependancy have made them weak and helpless. What they need now is little help, initially, to take-off. There is also no need to create a new agency or to formulate developmental plans. The villages already have a well developed administrative system which has been doing the developmental activities all these years. What we have to do is to recognise it and send an advisor or co-ordinator from outside.

Role of University

To summarise, in rural society there is disunity, lack of morality, poverty, under-and-unemployment, exploitation, under-utilization of resources, lack of awareness about their rights and privileges and duties etc., and these have made the village life miserable. Those who are educated and could struggle-hard in life leave the villages seeking a living outside. This has resulted in the brain drain and has to be checked or substituted. Because it is through these educated villagers that the rural society has to be revitalized to take-up the development work on its own and with more seriousness. Let us now consider how the universities can involve and help in rural development. As the centres of teaching and learning the universities can provide better ideas and also training to rural youth and agencies for change. The informal education received by the village youth was aimed at the maintenance of the social order in the society. Now what they need is a type of education which will not only train them to accept change but will also make them to think of recommendations for change etc.

As it has been already said the function of a university is to propagate and extend the frontiers of knowledge. However, these are not the only aims of a university. Because it is the centre of learning and seat and congregation of learned men and women of the society. Jawaharlal Nehru (1947) pointed out: "A university stands for humanism, for tolerance, for reason, for progress, for adventure of ideas and for the search for truth. It stands for the onward march of the human race towards even higher objectives. If the universities discharge their duty, then it is well for the nation and the people." The report of the Indian Education Commission of 1964-66 says the aim of a University is: "To provide society with competent men and women trained in agriculture, arts, medicine, science and technology, and various other professions, who will also be cultivated individuals imbued with a sense of social purpose". This means it is precisely the duty of universities to supply the required type of men and women to meet the needs of the society.

The universities can help in rural development and they also have an obligation to do so. I will not agree with those who say that universities are not conscious of the society around them and its problems. The trouble is that nobody comes forward to take note of what the universities have to offer for the betterment of the society. Moreover, if the universities are isolated today, it is not self-imposed but others have neglected and kept them away. Nobody, including the government, I am sorry to say is making use of their knowledge because they themselves do not know how to use them. On the other hand if the universities suggest something the administrators have no patience to listen to them and take a judicious decision. This attitude should be changed. Today national development is very costly and the planners would like to utilize all possible resources and ideas for this development. So the universities, which have the skill and ability should be involved to play an active role rather than ignoring them with some preconceived notions.

Another criticism levelled at the universities is that the Indian universities have become just degree-awarding agencies and their teaching is impractical and has no relevance to societal problems. For this we can only blame society and the government and not the universities. If the government policy is to have a practical and job-oriented education they can as well ask the universities to do so. I also do not agree with those (especially Naik, 1976) who say that the universities should be closed for some time and its students, teachers and administrators should be taken to villages to work. I say that these are impractical suggestions. These persons do not seem to have any idea about the working of either the universities or the society. Rural development is not an easy job. The people who undertake the activity should also be trained and well prepared both bodily and mentally. One should also keep in mind that the experts in the universities are a skilled and specialized group. They will be of much help in their own way and not in digging drainages in villages.

Broadly speaking, though the main aim of a university is to train students and propagate knowledge they are not barred from undertaking other activities. Today a few of our universities enjoy considerable freedom to chalkout their programme of activities. So they can undertake any activity, including rural development. Universities can also chalkout such teaching programmes which will help in rural development. As of now some work is already going on in a few university departments. As a part of their teaching programme they insist on field work in a village for a month or during week ends. Students are also asked to write a report or a dissertation. But these are done only to train students and not with any utility. These dissertations are viewed as the work of a mature mind and so are not given due importance. Instead of this the students may be made to study the rural situation with a problem solving approach and under the strict supervision of teachers so that they can be later used for the development of the rural society.

A few may argue that the courses taught in the universities today do not provide them with proper societal background. I agree with them since the courses presently taught are not prepared with this intention. To achieve this, first, the policy of the government towards education should change. It should be farm-based, hospital-based and society-based and so on. As Patil (1976:4) says—the focus and impact of higher education has to be drastically reoriented from that of building an 'elite' to that of being useful to the common man. This programme should be specially devised, keeping an eye on practical training and involvement of the students in which he is specializing. But today a few who are unable to go to villages have influenced the entire education policy and have made it a classroom activity. Keeping these in mind I would like to suggest courses and programmes for rural development. These will be in accordance with the law and the policy of the state. By this training students will not only get a degree from the university but also get an opportunity to employ themselves through implemention of the programme.

Conclusion

My whole scheme is based on the belief that the existing rules and regulations of the government are suitable for the rural development and unfortunately the villagers lack training and knowledge to take these benefits. This can be attributed to lack of leadership and proper guidance. The present leadership lack knowledge of the society and the developmental schemes. They also have certain vested interests since they are already a part of the village system. So it is believed that a person with official leadership qualities but without any administrative powers in the village, will be a suitable person to co-ordinate with the village people on one hand and the government on the other. It is with the help of such a trained university graduate the present scheme to develop rural society is prepared.

The scheme I propose now will have two types of programmes—short range or immediate and long range or permanent programmes. The short range programmes will be taken up immediately with the help of university teachers and students through the agencies such as NSS, Rovers, NCC etc., and the villagers. Urgent needs of the village such as roads, school buildings, drainages, etc., can be constructed by them. The poor, the old, the sick and such other needy can be taken care-off and helped. Their children can be helped to get good food and care., students can be given with books, food etc. Classes may be conducted to teach the adults about the health and hygine, leadership, social education etc. The rural products such as the milk, butter, vegetables, eggs, chicken, etc., and if possible the major products such as the rice, jawar, chillies, cotton, etc., which are sold outside the village for lesser profit during season, can be bought using the village betterment fund of the village and sold later to the needy, in the village itself. Money needed for this can be raised through donations, gifts, grants from welfare agencies etc., and kept as the village betterment fund. All these can be arranged by an university graduate with the help of the villagers, government and the university.

The long range or permanent programmes will be undertaken through system approach. Its main aim is to train the villagers for self-help and to revitalise them. The first aim would be to set-up a system to undertake the developmental activities in the village. To start with a new course—Rural Studies and Development—has to be opened in all Social Science departments of universities. Dedicated and practical minded youth can be selected and trained with this course and sent to villages to take-up the developmental programmes. For this any bachelor degree holders may be admitted as long as they have the aptitude to undertake the development work in villages. They should be taught all the required subjects drawn from different social science backgrounds like Sociology, Anthropology, Social Work, Psychology, Political Science and Economics, for two years. Practical training should be given to them by making them to live in villages to get acquainted with the rural society—its working, problems, obstacles to solve these problems, etc. Representatives from the university, government, village and a graduate of the Institute as the co-ordinator, will form the required system to undertake

the developmental work in villages.

The list of courses to be taught may be devised in such a way that within two years the student should acquaint himself with such matters as—what is the village community, how the agrarian economy is organized and changes, functioning of the local self government and psychology of rural folk. To acquaint the student with tools of study and understand the rural society and it's problems such courses as tools of research, channels of rural communication, leisure and recreational activities and human factors in technological change—may be taught.

Further to acquaint the students with the background and nature of the rural problems such courses as: Rural problems, Community organization, Rural health and population control, and Management of development agencies may be taught. Finally to acquaint the students with development work already done with the help of a few rural development schemes, factors which disrupt the development, etc., may be taught with the help of courses such as: Community development and agents of directed change, welfare of weaker sections, rural labour and employment, and co-operation and rural banking.

In addition to these courses the students should be made to do field work in a village or in an agency connected with rural development, for one day in a week. They should also be made to participate in a weekly seminar on rural society. They should be trained to take up a project—to plan, find the resources, to execute it, etc., for rural development. This he will finally submit in the form of a dissertation for his degree. For this he may be asked to take a problem connected with the rural society such as health, education, agriculture, leadership, co-operation and so on. He will study the problem thoroughly and also prepare a plan to solve it. In his plan he is made to workout the possible sources of finances, time, personnel needed and so on. After approval by a board of experts and with the incorporation of suggestions, the same will be accepted as a stratagy or appraisal for development. After graduation the student may be made to implement it and thus get himself employed.

In this way the new scheme will have three ambitious programmes: (1) to train its students to understand the rural society—structure, working and problems, (2) to prepare a stratagy to solve them, and (3) to make use of the services of the graduates who prepare the stratagy to solve the urgent problems in the rural society. In this way the universities can involve themselves in rural development which will be in accordance with the aims and objectives of the government as well.

References

1. Govt. of India, Education Commission, (1966), *Report of the Education Commission, 1964-66* (Kothari Commission), New Delhi.
2. Bedan Powell, (1896), *Idian village community*, London: Longmans Green & Co.,
3. Gurumurthy, K.G., (1976), *Kallapura: A South Indian Village*. Karnatak University, Dharwar.

4. Henry Main, (1881), *Village Communities in East and West.* London: John Murry.
5. Gurumurthy, K.G., (1973), *"Fertility festivals and unity in Mysore village", Society and Culture.* Vol. IV. No. 1. Pp. 111-120.
6. Jahagirdar, M.P., (1977), Traditional leadership and statutary panchayats. Ph.D. thesis submitted to Karnatak University, Dharwar.
7. Naik, A.J., (1976), "Development and Democracy". Parts I & II. *Indian Express.* 21 and 22, December, 1976.
8. Nehru, J., (1947), Convocation address to the University of Allahabad.
9. Patil, B.C., (1977), "University Education and Rural Development". Paper presented at the symposium on University Education and Rural Development. Karnatak University, Dharwar.

DIRECTORY OF SCIENTIFIC RESEARCH IN INDIAN UNIVERSITIES, 1974

Published by the University Grants Commission

Containing information on:

9,930 Research Projects carried out by 66,333 Scientists on Physical Sciences, Bio-Sciences, Engineering, Agriculture, Management Transport, Chemical Technology and Architecture; pp. 682.

Price Rs. 35; £ 4 (UK); $ 15 (USA)

Available on Sale with

(1) Assistant Education Officer, Sales Depot, Ministry of Education & Social Welfare 511, C Wing, Shastri Bhavan New Delhi-110001

(2) Manager of Publications, Government of India, Publication Branch, Civil Lines, Delhi-6 and his authorised agents.

Trade Enquiries Solicited

While ordering copies, please quote Symbol No. PUGC. 36 (N)

Journal of Higher Education
Vol. 4 No. 3 Spring 1979

University and Emerging Educational Technologies for Adult and Continuing Education

R. JAYAGOPAL

The Report of the Education Commission (1966), Jessup (1970), Duke (1972) and Adiseshiah (1977) have stressed the need for Universities to make too widening access to Adult Education. Any assessment of the role of University in Adult and Continuing Education must answer the following question. "What are unique features of the University as an Adult Education Institution and how can these resources be utilised by the community in the most effective manner?" The most obvious answer and the least disputed point is that Universities represent a vast pool of talented people in the natural and social sciences, in various aspects of professional practice, and equipped with excellent educational and instructional technologies to deliver knowledge to any target audience. The Universities and Institutions of higher learning are also centres of research which is another unique feature. They are in the best position to take an independent, critical and objective view of many issues—both scientific and social.

The development and application of educational technology at the institution of higher learning is so thorough that one can improve the process of learning by using varied techniques and aids.

What is taught, when it is taught and how it is to be taught, i.e., the content, the learner, scientifically established principles of learning, teaching learning process, studying of teaching, techniques of presentation, using of aids, arrangement of stimuli situation, organisation of learning experiences, feedback and evaluation, etc. which are the core concept of educational technology are available to the Universities and educational programmes of the institutions of higher learning could carry all the aspects of educational technology outlined above with objectivity, independence and impartiality.

World Sociology

The panorama of World Sociology clearly indicates that there are 80 crores of illiterates and its number is ever increasing, which could be considered as "mankind's last scourge". By no measure it is a long-way from being eliminated and the developing countries have not accorded relative priority to the literacy programmes in the framework of economic development.

Realising this, particularly on the eve of launching National Adult Education Programme, the University Grants Commission in its most recent guidelines on Universities participation in the National Adult Education Programme speaks of 2 specific directions.

The Universities cannot confine their concern to the expansion of the frontiers of knowledge and to its distinctive of fulltime based secondary students, but their activities should also include organisation of education programmes including literacy for illiterate adults, to enable them to play a self-reliance and active role in their development and in the development of their environment.

The Universities should organise different kinds of programmes for different groups of adults at various levels.

The task of University should be as diversified and multifarious as life itself is. If the goal is life-long continuous education, education has to be beamed at different target audiences—illiterates, non-learners, school drop-outs, people wanting to further their professional qualifications, who wish to supplement their University Degrees, those looking for leisure time activities from urban and rural areas, men and women of different ages, races, traditions, beliefs, cultural back-grounds, walks of life etc.

The types and forms of Adult Education may be formal, vocational, professional, remedial, liberal, enrichment, non-formal and informal.

Also the educational message of the Adult Education Programme could be simple and complex and it could be woven around some of the following areas: Human Economics, Health Education (related to maternal and child health), Communicable disease, Nutrition for the family, Civic Education, Social Education, Social Welfare, and Family Planning.

Organisational Structure of a Proto-type Department

The aspect of organisational structure of the Department of Adult and Continuing Education at an University should also be considered as a crucial factor for proper planning, programming, monitoring and evaluation of the many Academic and Continuing Education Programmes. The Prototype Departmental structure could be considered as complete only with two major wings. One, an Academic Wing, which would cater primarily for teaching degree programmes, conducting research, lending consultancy services, engaging in documentation services and the other wing for training various leaders needed in the field of Adult and Continuing Education.

Priority should be accorded in training leaders in the area of Communication and Extension as programmes of Adult and Continuing Education could be successfully administered only with leaders who have insight into the process of communication and extension. The Verghese Committee on re-organisation of All India Radio and Doordarshan has precisely recommended for the training of the above personnel at Universities.

The other, is a Continuing Education Wing to cater to the needs of urban trade and industry through their human resources development programmes. Further under the auspice of Continuing Education Wing several programmes for the weaker sections could also be developed covering the rural and urban slum population. In addition to the two major wings elaborated earlier, the activity of extension should be considered as part of the academic and the Continuing Education Wings. Thus the technology of University Departmental structure if properly utilized will lend itself for furthering many of the adult and continuing education programmes, at the University as well as College level.

Types of Universities

Considering the intent, purpose, goals and availability of the kind of educational technology, at the Universities and Institutions of higher learning in India, generally four kinds could be recognised which are as follows: (1) Urban Universities, (2) Rural Universities, (3) Technological Universities, (4) Agricultural Universities.

It would be but apt that institutions continuously take stock of the educational situation and diversify their educational structures and strategies according to the changing needs, aspirations, policies and practices of the socio-technical systems of the area. People aspiring for higher education now has to travel some distance where institutions of higher learning are located. Also the institutions are selective in enrolment policies. Further more college education as practised now, has to be a one shot affair where an individual is housed, transformed and then returned to the community.

Till recently for adults to get education, (illiterates, neo-literates and literates) there were not many institutions. An average adult is over burdened with many socio-economic problems, having little time for literacy or education and as such new techniques of arousal will have to be used in involving them in the education process. The development in the area of mass communication technology, today, unfolds many promises and offers new strategies of learning to vast number of people. Radio forums, tele-clubs, and TV group viewing have proved effective in tackling some of the community development programmes and reaching a large number of rural audiences. Open Universities have pressed into service radio broadcasts through franchise station and have obtained excellent results.

As observed at the US Agricultural and Mechanical Universities (Land Grant Institutions), the farm extension faculties have established good co-operation between themselves and the farmer trainees through franchise

radio stations. (Stations for broadcasting specific programmes over specific distances for a set purposes.)

In Columbia (Latin American Country), the challenge has been to free the rural campesino (farmer) from the isolation and impotence imposed on him by his own ignorance, fatalism and inertia. The Educational Institutions have fully pressed into service their expertise in Colombia to help the farmers through their ACPO Programme (Accion Cultural Popular). The strategy adopted under the ACPO is to approach the illiterate farmers and weaker section people through newspapers, booklets, recordings, listening groups, campaigns, mobile units and through direct contact. The net-work of trained volunteers link the radio instructors and the students.

In Tanzania, Adult Education is a national movement and hence it involves all the community and its institutions. In Tanzania, Adult Education offers a way to shake themselves out of apathy and resignation to use new ways to regain traditional values expressed in the word "Ujama" family-hood in the village. Here they share together their work, freedom, possessions and above all their common humanity as did villages in Africa, centuries ago. This process is expedited and fecilitated through varied educational technologies developed at local institutions of higher learning.

The Agricultural Universities of India have created similar forums through "Charcha Mandals", wherein farmers and the extension faculty get together and discuss various farming problems, and snags of new techniques advocated. The communication centres at the Indian Agricultural Universities can be fully equipped and geared to meet the requirements of radio and TV by getting fulltime faculty which is not the case now.

The Correspondence Education programmes supplemented by radio lessons have again sufficiently re-inforced knowledge and contact. The radio programme motivates the audience and helps them to participate in the proceedings completely.

Multi-media Approach

The multi-media approach combining TV programmes with film demonstration, self-study manuals, correspondence courses, weekly discussion sessions and summer contact programmes has proved very successful in offering additional advantages and possibilities for those wishing to improve their qualifications.

TV and radio can present subject matter in a variety of ways, in all forms of the spoken word—variation, dialogue, lecture, interview, commentary, dramatization, or in form of literacy art and this has been found to be very helpful in evoking and retaining interest, to stimulate efforts in learning, to challenge curiosity and intellect, to affect emotion and attitude especially from the less captive audience.

Mass-media can be used in an auxilliary capacity or for direct teaching purpose. Whatever vehicle may be used, the media by themselves cannot achieve much. Consolidation and extension of the impact can be achieved

only by integration of the man-machine-man system and developing a technology with its characteristic methods and concepts to face the problems and the needs of its clientale.

A case in point is the utilisation of the mass-media-TV, by the Department of Adult & Continuing Education at the University of Madras in collaboration with the Doordarshan Department. The Madras University project attempts to cater to the learning needs for the weaker sections of the society and particularly to the rural population in the Madras belt. It is envisaged that through TV teaching, learners will be able to acquire basic reading, writing, arithmetic skills, work oriented elementary skills which will enable them to solve their basic socio-economic problems and to participate more effectively in the development of their whole village. The participants in this programme are the 300 adults who are in the 200 villages where community TV sets have been installed. To facilitate better viewing and learning, 200 animateurs have been identified and the project envisages a 2 way communication between the programme planners and programme beneficiaries.

When formulating a new programme like the TV-University link up programme, Universities could blend their educational technologies with technologies available from other Departments in a co-ordinated manner. For instance, in the Madras University-TV link up programme the TV personnel, and the Department of Information and Public Relations are involved in evolving several strategies for broadcasting an effective adult education programme.

The Madras University-TV link up programme envisages to help the learners acquire work-oriented basic reading, writing and arithmetic skills. Also it aims to solve the basic socio-economic problems of the rural people through effective participation in the village developmental activities. The typical telecast lesson spans over 30 minutes and contains 3 different aspects. The first 10 minutes unit is utilized for broadcasting a literacy lesson, with focus on 5 key words. Conscientization methodology is used for building vocabulary skills. The next 10 minutes unit is intended for telecasting a typical simple rural industry for the benefit of unemployed rural population who could utilize the knowledge and generate some self-employment programme. The third unit of 10 minutes is utilized for interviewing the viewers towards obtaining proper feedback.

The resources of the institution of higher learning could also be pressed into services for conducting proper evaluation and research of various Adult Education Programmes. The expertise available from the various departments of the University could be further utilized by the Department of Adult and Continuing Education for evolving the base curricula to cover the following clusters as suggested by Bhola. (1977)

Cluster 1: Knowledge in relevant functional areas:
Economic knowledge (vocational)
Health knowledge (scientific)
Family life knowledge (scientific)

Civic knowledge (special scientific)

Cluster 2: Use of literacy

Use of reading
Use of writing/expression
Use of arithmetic
Use of graphic/pictorial skills

Cluster 3: Adoption

Adoption of recommended economic practices
Adoption of recommended health practices
Adoption of recommended family life practices

Cluster 4: Social participation

Participation in economic institution
Participation in social institution
Participation in political institution
Participation in traditional institution

Cluster 5: Mass-media behaviour

Information consumption behaviour
Radio listening behaviour
Written materials
Scholarization of children

The available instructional technologies provides certain cognitive dimensions, such as knowledge, comprehension, application, analysis, synthesis and evaluation. A balanced programme either for literacy or for awakening the critical conscience of the masses could be structured around an educational programme with the broader dimensions of cognitive dimensions, outlined above. In addition to this, specific functional skills could also be developed among the participants by using the mass-media TV which could be oriented to their economic situation. The type and the functional skills which will not have any second order effect on the learners could be identified by the programmers.

If the educational developments in India continue as they are, then by the year 2000 A.D. this system, which is elitisist in character, if corrected, will perhaps lead towards short duration educational courses and non-formal education. These are clear-cut trends which indicate how higher educational system and their emerging educational technologies can be made appropriate to the needs of a large human system. The case for these changes can be discussed as follows.

References

1. Adiseshiah, M.S., Some Tasks Facing Secondary Education. *Paper presented during the Conference of Boards of Secondary Education in India, Madras, September 23, 1977.*
2. Bhola, H.S., Evaluation of Functional Literacy Programmes Tehran, 1977 (unpublished document).
3. Duke, C., Survey of World Trends on Access to Adult Educaton: The Contribution of Universities. *Journal of International Congress of University Adult Education, 1972*
4. Jayagopal, R., Universities and Adult Education, *University News,* Vol. XVI No. 10, *1978.*
5. Jessup, F.W., The Changing Role of Universities in Adult Education, *ICUAE,* 1970.
6. *Report of the Education Commission, 1964-66 Government of India, 1966.*

GUIDE TO INDIAN PERIODICAL LITERATURE

(Social Sciences and Humanities)

Published Quarterly with Annual Cumulation

Guide to Indian Periodical Literature is an author-subject index to articles, research papers, notes, conference proceedings and book reviews from about three hundred Indian journals in social sciences and humanities. The *Guide* also covers daily *Times of India* for news, signed articles and significant editorials.

The material is classified according to *U.S. Library of Congress Subject Headings* and arranged alphabetically on the dictionary pattern.

Guide is a basic reference tool on social sciences in India.

Subscription Rates

Rs. 300.00 : $ 60.00 : £ 25.00

Cumulative Volumes

1964 to 1977

Price 14 Volumes

Rs. 2,240 : $ 485 : £ 193.50

INDIAN DOCUMENTATION SERVICE
GURGAON, HARYANA-122001 (INDIA)

ASIDOC

The ASIDOC invites research articles, project reports, proceedings of seminars and workshops, news of festivals and exhibitions, information on activities of institutions and organisations such as libraries and universities, museums and galleries, foundations and research centres, academies and associations etc.—in short, any significant contributions on Asian cultural topics.

A remittance of US $ 40 for each 325 words will be made on the edited version of submissions.

For details, please contact:

ASIDOC

Post Box 41/2786

Tehran, Iran.

Journal of Higher Education
Vol. 4 No. 3. Spring 1979

Linkage of Higher Education with Environment*

G. SUBRAMANIA PILLAY

The Magnitude of Higher Education

It is estimated that in India, at present there are more than 70 million students in different educational institutions. Out of them about 3.5 million are in universities and colleges. Among those, hardly 25 per cent are in professional colleges and the remaining are getting their general degrees without a vocational bias. Yet, it can be a matter of proud for us, for the spectacular achievement that we gained in the field of higher education after independence. According to the census of 1971, the well trained pool of manpower in India included 1,800,000 scientists, 1,85,000 engineers, 1,38,000 doctors, 1,35,000 university and college teachers and 61,000 agricultural personnel. This is the largest trained manpower in the world.

The annual increase in enrolment in the universities and colleges has been 13 per cent and it is expected to cross 10 million mark by 1985. The annual rate of economic growth for these years has been roughly three per cent and the rate of increase in enrolment in higher education is disproportionate to it. In spite of the efforts to give elementary education to all for the respective age groups, there is no private demand for it. This is clear from the recent figures given, that is, out of every 100 children of six years of age, 20 never go to school, 55 drop out at an early stage so that only about 25 complete class VIII. On the other hand there is a great private demand for higher education, where there is no social demand for it. The state is interested in the dissemination of elementary education for the 70 per cent illiterate population because the return from them is greater

*The main objective of this paper is to discuss a few concrete suggestions to link higher education with environment.

to the state than from higher education. The following table shows the comparative cost benefit analysis for different levels of education.

TABLE SHOWING THE COSTS AND BENEFITS FOR DIFFERENT LEVELS OF EDUCATION

(in Rupees per individuual, per year)

Levels of education	*Social cost*	*Private cost*	*Social return*	*Private return*
Primary level	105	32	10.1	10.4
Middle level	135	53	9.9	10.1
Secondary level	459	217	5.0	6.0
B.A., B.Sc., level	1108	530	4.8	6.4
M.A., M.Sc. level	2352	585	8.6	11.7

Though there is significant increase in the enrolment, higher education may not be a fundamental right to all. It is true that California in USA and some of the European countries are approaching mass higher education, but in India we still struggle with mass elementary education. Therefore, higher education is a privilege which shall be open only to those who have demonstrated the ability and aptitude to benefit by it. Again higher education is too precious, too costly to be fritted away on unimportant or largely irrelevant purposes.

Distant Education

Recently the nonformal ways of getting education is receiving much attention. The concept of 'distant education' is becoming very popular in many parts of the world. Under distant education system, Open University, correspondence-cum-contact programmes, summer schools, weekend classes, inservice institutes, radio and television lessons, programmed instruction textbooks, tape recorded lectures etc. are the different types practised by the different universities and the nations. This type of distant education makes it possible for a great number of people who have accepted some positions in different walks of life but anxious to continue higher education. Particularly in a country where 80 per cent of the population lives in villages, correspondingly many people will have to work among them who will be away from the urban habitations. When many are not in a position to go to universities the university education should come to them. For a country of the size and population of India and of the poor economic development extension of distant education in different forms may be the right solution for many to grow up academically and professionally. In USSR 40 per cent of the students community of higher education are in the evening and correspondence colleges whereas its percentage is hardly 1.5 in India. We have to go a long way in this direction.

Involvement in Community Development

It is an often repeated criticism that the staff and students of the universities and colleges do not involve in the developmental schemes and programmes of the country. The institutions of higher education have a significant role to play in the country's development. Besides seeking new knowledge, the higher educational system has got a greater responsibility to the society as a whole. All colleges and universities should develop closer relationships of mutual service and support with their local communities. 'Service to the Community' shall be accepted as an important responsibility. This service to the community should not be looked upon as a welfare activity for the deprived social groups but as a process of interaction with the society leading to valuable learning experience and as a means for making higher education relevant to the needs of the society.

In order to increase the relevance of the endeavour to social purposes as the Reading Material, prepared by the National Staff College suggests (1978) all students and teachers in institutions of higher education should meet a part of their social obligation in productive and socially useful labour. For that, the work of the universities and colleges shall be integrally linked with workshops, factories, industries, public service agencies, laboratories and research institutions and most important with neighbourhood schools for purposes of devoting at least one fourth of the term time to productive labour, appropriate to the course work of the students.

Participation in Adult Literacy Programme

Under different names though efforts have been made, the adult literacy programme has received very low priority so far. In view of the fact that it yields rich and early dividends, it should be accorded the highest possible priority in the years ahead. Even among adults the education of the large number of poor and illiterate persons should receive the utmost attention. The government has now launched the National Adult Education Programme in order to liquidate the illiteracy among the adults. This massive programme, this time depends not only on the elementary school teachers as it has been before, but it also seeks the co-operation of all the educated people. The institutions of higher education must assume adult education and extension as an important responsibility and give it the same status as teaching and research. A major part of the productive labour of students and teachers in all universities and colleges may be directed immediately for the liquidation of adult illiteracy which is a national misfortune. Just as a precondition is laid to the medicos to the effect that they will work in villages after the completion of the course, it should be made obligatory that one gives such a declaration that he/she will work for the liquidation of adult illiteracy in one or different forms during his/her studentship in the college or university.

The mode of attacking the problem of adult illiteracy may be different.

One sure way, particularly suitable for colleges and universities according to the present author is to organise village camps for the purpose during vacations. Choose a particular village, enumerate the number of illiterate or neo literate and other types of persons. Structure the suitable curriculum and course immediately and implement them through various media with the help of different personnel available. During a vacation one, two or more of such villages depending upon the students and staff strength can be taken up. If a village is chosen, we should see that all of them get literacy at the end of the project.

Though the objectives are entirely different, there are more and more universities in North America and Europe and increasingly in other regions of the world that take adult education seriously. They do it with some involvement in the community and community education. This commitment is again not found in our country. As Kidd (1975) points out, this commitment is even more marked in some of the other developing countries, such as, Tanzania where the new universities no matter on what national model they are patterned are being forced or are moving to a position of fostering some community education. This shift in emphasis is a desirable symptom that usually happens much more rapidly in the newer than in the traditional universities which is encouraged by some educational statesman like Julius Nyerere of Tanzania.

Improving the Quality of Life

Improving the quality of life, especially in villages shall be the major objective of higher education, till we achieve this end. All the research projects and activities taken up by different faculties, the projects taken up by research students for research degrees should aim at improving the quality of life of Indians. The universities should see that the findings of these studies have a direct bearing upon the advancement of knowledge and refinement of practices for improving the quality of life of the people.

Community Colleges

The term community development is well known to us. But 'community schools or community colleges' are not very much common in India. A community college will work for the welfare of the nearby community not only in the academic sphere but in all the aspects of the community life. Right from early morning till late in the night the college will work in one way or other for the uplift of the community people. For instance, morning 6 a.m. to 7 a.m. the college grounds may be used as gymnasium for the young men and women, 7 a.m. to 9 a.m. the college will be turned as the village dispensary, 9 a.m. to 10 a.m. the village panchayat or court will work in the same college. From 10 a.m. to 4 p.m. the regular day college may function there. Again evening 4 p.m. to 6 p.m. the college will provide different recreation facilities to the local people besides its own students.

From 6 p.m. to 9 p.m. it will convert itself into a nonformal centre of continuing education for the adult members. In this way a community college, its staff and students, buildings and other facilities will be fully utilized for the welfare of the community. This type of colleges are not very common in our country. But there are a number of countries having this type of community colleges that have arisen at a time when community leadership was an imperative one.

In our country where there is much economic constraint for alotting sufficient money for education, it is necessary to see that maximum benefit is derived out of the money spent. There should be a model community college giving a new type of education in each district. These colleges as UGC has suggested should draw their teachers partly from business, industry, commerce and agriculture, and partly from academic fields. They should have considerable freedom and autonomy to change their courses according to the needs of the changing society.

Some Other Models

A new type of higher educational establishment known as Plant Technical Institute has been added to the school of higher education in USSR. It is an integral part of a large plant which trains specialists with a higher education. Their studies are based on a combination of practical work and theory. The working students is thus given an opportunity to learn every work process connected with his future profession in a systematic way. The Mobral Programme in Brazil is one extraordinary example where the educational organisation and process is remarkable. Some five million men and women were enrolled in some form, the relation of national and community efforts is complex and the results claimed are phenomenal. The British universities organise special courses in addition to normal routine lectures for the so called 'students without gowns', known as extension courses. They also turned their attention to the dissemination of higher education among the industrial workers in collaboration with voluntary organisation. Similar systems can be tried in India also.

Consultancy Services

The College and University community should consider it an obligation to give extension lectures to the community to interpret the recent trends in their fields. Besides this, these institutions can also act as a service extension agency. For example, the medical teachers and students can provide medical relief. Agriculture graduates can repair farm tools, provide good seeds, fertilizers, etc. The expertise of the college and university can assist local developmental agencies. This type of consultancy services in their respective discipline can be given to the relevant industries or other concerns. As Kulandaiswamy (1978) says if the consultancy services are initiated in all faculties they will have to equip more to meet the society's demands and

it will stimulate a healthy competition among the different disciplines of the university. In the long run, there will grow a tendency among the people to approach the expertise available in the colleges and universities.

College Complexes

Universities and colleges have an important role to play in the field of school education also. The products of the schools are the input for the higher education. It is always easier and better to work for the qualitative improvement at the school level than working for it after the students join in the colleges. The scheme of 'college complex' is based upon the principle of cooperating with the neighbouring schools in all possible ways. This may extend from helping the schools with their physical facilities of the library, laboratory etc. to conducting orientation and inservice programmes for their faculty development. In Tamilnadu where the plus two stage has been attached with the schools, the physical and the human resources of the colleges are going to remain unutilized fully. These colleges can come forward with a helping hand to the neighbouring high or higher secondary schools.

Environmental Education

While consideraing linkage of higher education with community, it is but right to mention about the emphasis of the 'environmental education' to be integrated in the curriculum. This concept of environmental education is not to be treated as yet another subject to be included in the syllabus. But it should be the integral part of it. The international workshop held at Belgrade in 1975, where the so called 'Belgrade Charter' came into being, emphasised: (i) to give a slant on environmental issues in all our curricula, (ii) to organise special courses for non-formal learners, and (iii) to develop special course for tertiary-level learners in the universities.

In our country as Krishanswamy (1976) puts it, that illiteracy and ignorance are the two major factors coupled with superstitions, that are responsible for the environmental degradation. Environmental education, therefore, means telling the people about these and motivate them to act. This education should be given right from the beginning of elementary education to the higher level, rather it is a life long education. At the university level, the students would be mature enough to understand the concepts, and therefore, the emphasis should be on developing right attitudes and skills and motivate to action. For example conservation of natural resources and careful use of them calls for a new attitude of mind, etc. The curricula of the different sciences or humanities and particularly of the professional courses should have a stress on environmental education.

In addition to introducing a slant towards environmental education in all our courses, Belgrade workshop (Krishanswamy 1976) suggested also the introduction of certain courses in universities leading to bachelor or master degrees in environmental education. These persons would become

environmental integrators or implementors of environmental programmes. They would help in environmental planning. The Mahidhol University at Bangkok runs such a course at the level of Master degree. The Tamilnadu Agricultural University offers a course at the level of B.Sc. For non-formal learners depending upon their major vocations a need based curriculum can be developed on Environmental Education.

UGC Directive

In this connection it is fit to quote the UGC directive regarding the main objectives of higher education. They are: (i) to enable universities/ colleges to become aware of the social responsibility and to bring them and the community closer, (ii) to provide to teachers and students opportunities for service, leading to a learning experience not otherwise provided within the walks of the campus, and (iii) to educate the community and to involve it meaningfully in national development deriving benefit of the resources and energy of the teachers, students and the campus itself.

Proper Use of Educational Technology

Because of the scientific and technological changes, men and women today should keep themselves abreast with all the rapid changes through a process of continuous life long education. For this, the use of mass media such as, radio, tape recorder, different types of projecting aids, overhead projectors etc., and the individualised instruction methods. such as, programmed materials, modules, etc., shall be made use of refining the teaching for whatever levels it may be. The use of Programmed materials for correspondence course is a boon. The learner can learn at his own rate of learning. He will actively participate in learning. The knowledge of results supplied to the learner in this material helps him to get reinforcement. The faculty of the colleges and universities must come forward to understand the various uses of these hardwares and the preparation of soft wares relevant to them. Proper utilisation of educational technology assures success in all the above discussed programmes.

References

1. Education in the USSR, Progress Books About the USSR, Progress Publishers, Moscow.
2. Goodlad Sinclair (1976), *Conflicts and Consensus in Higher Education*, Hodder and Stoughton, London.
3. Kapur, J.N., (1975), *Current Issues in Education*, Chand & Co., Delhi.
4. Kidd, J.R., (1975), *"Education for the Community" in 'Education or Catastrophe?* Edited by P.S. Sundaram and H.B. Shah, (1975), Vikas Pulishibng House, New Delhi.
5. Krishanaswamy, S., (1976), Environmental Education in India. Paper presented at the Regional meeting on environmental education for Asia and the Pacific, Bangkok.

Journal of Higher Education
Vol. 4 No. 3 Spring 1979

Notes from Research

A STUDY OF PERSONALITY SYNDROMES AND COGNITIVE CHARACTERISTICS OF SCHEDULED CASTES, BACKWARD CLASSES AND NON-SCHEDULED CASTES STUDENTS*

Origin and Background

The scheduled caste and backward class students living in socially impoverished and severe psychological handicaps from the remote past, although have shown signs of improvement in their lot, are still far behind the students of the non-scheduled castes in several behavioural respects. The constant social disadvantage has probably adversely affected their cognitive abilities as a result of which they fail to make achievements in academic, social and political fields. The policy of the Government during the last thirty years, to give facilities for higher education, special privileges and encouragement in terms of reservations in service, admissions to academic and professional colleges and the provision of scholarships, stipends, etc. to the students belonging to scheduled caste and backward classes has paid reasonable dividend. But the quantum of dividend is so small that those who are interested in the welfare of this community will have to ponder dispassionately and evolve strategies through which the pace of development is maximised.

Earlier, a Harijan could never hope to cross the barrier of untouchability, nor could he has the inner motivation to pursue higher learning. These disabilities were not only economical, cultural and structural in the past, but they were also psychological in as much as there was no individual motivation. The real challenge with respect to the scheduled castes, backward classes, and non-scheduled castes students emerge when attempts are made to differentiate their personal characteristics, to understand them as students beyond the normative sense, to know not only how they are like others but also in what ways they differ.

Mixed hostels exist and are given preference in order to promote a sense of community living, participation and emotional integration. Yet, it is pertinent to ask, as to how far these hostels have been successful in bringing about such a climate of common fellowship between scheduled castes and other non-scheduled castes students? Again, do scheduled castes or backward class students specially of Meerut University constituting the basis of

---

* Paper based on author's Ph.D. thesis submitted to the University of Meerut in 1978. A Grant-in-aid of Rs. 4,500 was sanctioned by UGC, New Delhi, to this research study.

this study, show any visible signs of moving upward closer to the higher castes students with respect to their personal and academic development? In other words how far have they, as a separate group made use of these opportunities? Have the differences as compared to higher castes students on their cognitive, emotional and personality characteristics reduced? These are some of the questions that are raised immediately in the mind of a person who reconsiders the issue of equalization of opportunities in the context of the scheduled and the backward class students.

The Rationale and Assumptions

The study is based on a theoretical formulation that the scheduled castes and backward class students having been subjected to socio-economic and cultural deprivations for long must be different in many respects from the general group of students. The development of personality, self concept, cognitive characteristics and academic achievement are a function of the quality of environment. In a stratified society, bleacked chances of life of a section of society generate inequalities in different aspects of self concept, perceptual motivation, achievement and intellectual rewards. These inequalities affect one's development self concept, personality and the process of academic achievement. It is assumed that certain personality characteristics like self concept and intelligence motivate the students to achieve more and certain others negative aspect of self concept to withdraw from achievement activity. It is formluated that certain specific positive aspects of self concept fascinate academic achievement while others interfere with it. It is assumed that one's actions and achievements in life are determined by what one feels, needs, aspires and thinks of himself. In the life of an individual, his capabilities and potentialities, the conception of self, the pattern of need structure and intelligence play a very important role. Under and over evaluation of one's own self both can indeed be tragic. It is formulated that the psycho-educational world of scheduled castes and non-scheduled castes students must be different as the past history of the scheduled castes students have been a story of social, political, economical, cultural and educational deprivations and isolations.

This study is based on a rationale of personality development and academic achievement. Personality has a cultural basis and academic achievement may be considered a complex, situational variable. Cultural influences play an important role in determining the extent of one's academic success. The present study has this kind of thinking behind it which seems to be significant from both the theoretical as well as the practical point of view. The basic assumption underlying this study is that the academic achievement is a form of behaviour which is determined by psychological positive aspect of the self concept of the individual, which may be dominant at that time.The different aspects of self concept have been considered for this purpose as various kinds of quantities of force which people have in different degrees and which according to intensities, drive them into different directions of behaviour. To achieve or not to achieve academically in conformity with intelligence have been regarded as the two directions of academic behaviour into which pupils are driven by their dominant self concept.

A scheduled caste member right after his birth is reared in an environment, which slowly, steadily, but positively helps in the development of feelings of inferiority, a passive alienation and a low confidence in his abilities to deal with new situations, he is exposed in his routine life.

Methodology

Population for the present research study, conducted in 1977-78 has been defined as the total number of scheduled castes and backward classes students of Graduate and Post-Graduat Classes of the six affiliated colleges of Meerut University. The present research survey is confined to only male university students sampling 544 of scheduled castes and backward classes and equal number of non-scheduled castes students for comparison of the two groups. The data for the study, were collected with the help of the scientific

research tools measuring variables like five aspects of Self Concept and Intelligence involved in the Study. The research tools; Raven's Progressive Matrices Test and Bhatnagar's Self Concept Inventory are used.

Variables Involved

(*i*) *The Self-Concept:* In the present study, it was presumed that the conditions of life shape the kind of self-concept one happens to develop. Since, the living conditions and socio-economic environment of the scheduled and backward class students have been significantly different from those of the other caste students, it was thought that there should be, for this reason, a significant difference between the kinds of self-concepts of the two groups of students. Hence, it was proposed to study the self-concept properties of the scheduled and backward class students and to compare them with those of the non-scheduled caste students.

Five aspects of the self-concepts of these students were studied in this study. These five aspects are defined as follows:

(1) *Achievement:* It means how good an achiever one perceives himself to be. In other words, the extent to which one perceives to have achieved in life.
(2) *Confidence:* It means how confident one perceives himself to be. In other words, the extent to which one perceives to be confident in life's situations.
(3) *Withdrawal:* It means the extent to which one feels he suffers from feelings of withdrawal and tendencies to escape situations of life.
(4) *Inferiority Feeling:* It means the extent to which one feels he suffers from inferiority feelings.
(5) *Emotional Instability:* It means the extent to which one feels he suffers from the feelings of emotional instability.

(*ii*) *Intelligence:* Intelligence has been found to be an important human ability. It may be of interest to know how the trait is distributed among the members of the scheduled caste and backward class students population of affiliated colleges of Meerut University and also to know how these students compare themselves to students of other castes on this trait. Intelligence, in this study, was defined as the general intelligence ('g'). The specific definition, as given by Raven of this factor "the ability to reason by analogy".

Findings of the Study

(*i*) *Self-Concept—Graduates:* It may be said on the basis of Table 1 that the structure and organisation of the self-concept of the two groups of students are much different from one another. On four out of five aspects of the self-concept, there are found to be significant differences between the mean scores of the scheduled and the non-scheduled castes students. The mean scores of the scheduled castes graduates as compared to the non-scheduled castes graduates are significantly higher on achievement, confidence, inferiority and emotional instability. The C.R. values of graduate groups are 3.50, 6.30, .53, 6.30 and 5.90. Except one of these on all other four dimensions the differences are found to be significant at .01 level.

This may mean that the scheduled castes graduates perceive themselves to be better achivers and more confident in comparison to the non-scheduled castes graduates. Also, it is found that they perceive themselves to be persons who feel comparatively more inadequate and inferior and who suffer more from feeling of emotional instability. These are contradictory trends characterising their self-concept. Co-existence of these contradictory trends is surprising and somewhat unexpected. It cannot be explained on the basis of this single research, and, hence, needs further probing.

(*ii*) *Post-Graduate:* As pointed out earlier, Table 1 shows that the graduates of scheduled

Table 1

MEAN, S.D., S.E.M., Diff., S.E.D., AND C.R. VALUES ON SELF-CONCEPTS OF SCHEDULED AND NON-SCHEDULED GRADUATES

Self-Concept Aspects	*Non-Scheduled Graduates*				*Scheduled Caste Graduates*						
	N	*Mean*	*S.D.*	*SEM*	*N*	*Mean*	*S.D.*	*SEM*	*Diff.*	*SED*	*C. R.*
1. Achievement	150	43.52	7.66	.63	150	46.32	6.03	.49	2.80	.80	3.50**
2. Confident	150	38.57	11.26	.92	150	45.34	6.60	.54	6.77	1.07	6.30**
3. Withdrawing tendency	150	28.12	10.23	.84	150	28.63	7.74	.63	.56	1.05	.53
4. Inferiority feeling	150	22.43	5.83	.48	150	27.66	8.37	.68	5.23	.83	6.30**
5. Emotional Instability	150	21.21	5.81	.47	150	25.93	8.07	.66	4.72	.80	5.90**

**Significant at .05 level*
***Significant at .01 level*

Table 2

MEAN, S.D., S.E.M., Diff., S.E.D. AND C.R. VALUES ON SELF-CONCEPTS OF SCHEDULED & NON-SCHEDULED POST-GRADUATES

Self-Concept Aspects	*Non-Scheduled Post-graduates*				*Scheduled Caste Post-graduates*						
	N	*Mean*	*S.D.*	*SEM*	*N*	*Mean*	*S.D.*	*SEM*	*Diff.*	*SED*	*C.R.*
Achievement	122	47.08	8.16	.73	122	46.34	7.66	.69	.74	1.01	.73
Confidence	122	43.75	8.53	.77	122	46.45	7.47	.68	2.74	1.03	2.62**
Withdrawing tendency	122	25.45	9.46	.86	122	29.75	8.09	.73	4.30	1.13	3.81**
Inferiority feeling	122	22.64	7.83	.71	122	30.44	8.41	.76	7.80	1.04	7.50**
Emotional Instability	122	23.44	6.84	.62	122	27.74	9.81	.83	4.30	1.04	4.13**

**Significant at .05 level*
***Significant at .01 level*

and non-scheduled castes differ significantly on four out of five aspects of the self-concept, but, in case of the post-graduate students, however, slight departure from the above picture of the self-concept of the scheduled castes graduates is noted.

Self-perception on the achievement dimension shows no significant difference between the scheduled and the non-scheduled caste post-graduate students. On other dimensions, significant differences are found in the same directions as pointed out earlier in case of the graduates. Table 2 shows that the C.R. values of post-graduate groups are .73, 2.62, 3.81, 7.50 and 4.13. That is, except one of these, on all other four dimensions the differences are found to be significant at .01 level. Hence, what is said about the self-concepts of graduates is almost true about the post-graduates also.

Differential Study of Intelligence

It may be said on the basis of results presented in Table 3 that with regard to intelligence, the post-graduate students of the scheduled castes and backward class appear to have slightly higher mean score in comparison to the graduates, but the difference is not significant. Larger differences are, however, found in this regard between the intelligence levels of post-graduate and graduate students of scheduled and non-scheduled castes. This difference appears to be significant also. The mean scores of scheduled castes post-graduates and graduates are 38.42 and 37.26 (C.R. value being 5.58) and non-scheduled castes post-graduates and graduates 44.61 and 41.37 (C.R. Value being 3.74).

Table 3

MEAN, S.D., S.E.M., DIFF. S.E.D. AND C.R. VALUES ON INTELLIGENCE OF SCHEDULED AND NON-SCHEDULED GRADUATES AND POST-GRADUATES

Non-Scheduled	*Intelligence*	
	Post-graduates	*Graduates*
N=	122	150
Mean	44.61	41.37
S.D.	8.65	9.93
S.E.M.	.78	.81
Scheduled Castes		
N	122	150
Mean	38.42	37.26
S.D.	8.74	9.06
S.E.M.	.79	.74
Mean Difference	6.19	4.11
S.E.D.	1.11	1.10
C.R.	5.58**	3.74**

* *Significant at .05 level*
** *Significant at .01 level*

In view of lower level of intelligence, poor self-concept characterising these scheduled castes and backward classees students, poor academic achievement is not surprising. They have not, yet, come at par with the non-scheduled castes students. The study has, atleast, reaffirmed the importance of personality characteristics and rich environment in intellectual rewards and academic-achievement. These findings have significant and critical implications. It may be that the various welfare schemes for Scheduled Castes and Backward Classes students are required to be extended and intensified or the implementation of policies should be backed by practical actions not simply paper benefits or lips sympathy as such, revision of existing policies may be imperative.

References

1. Anant, S.S., "A cross-cultural study of belongingness, Anxiety, Neurotism and Extraversion". *Research Abstracts Quarterly*, ICSSR, New Delhi, Vol. 1, No. 2, 42-48, 1972.
2. Barid, R.N.P., "An Investigation into the impact of social background upon educational achievement and motivation", Ph. D., Pat. Univ., '*A Survey of Research in Education*,' edited by M.B. Butch, Serial No. 6, CASE, Baroda, 1974.
3. Berreman, G.D., "Caste in India and the United States", *The American J. of Sociology:* Vol. 66, No. 3; 120-127.
4. Bhatnagar, R.P., "A study of some of the personality factors as pre-dictors of Academic-Achievement", Doctoral Dissertation, Delhi Univ., Aug., 1967.
5. Chauhan, Nariyan, and Singh, *Scheduled Castes and Education*, Anu Publications, Meerut, 1975.
6. Jenson, A.R., *Educability and Group Differences*, Methuen and Co. Ltd., London, 1973.
7. Patwardhan, S., *Change Among India's Harijans*, Orient Longman Ltd., New Delhi, 1973.
8. Rao, A.U., "Higher Educational and Occupational Mobility and the Scheduled Castes Youth", *J.H.E.*, Vol. I, No. 3, 305-314, U.G.C. New Delhi, Spring, 1976.
9. Sachchidanand, S., *Studies of scheduled castes*, 'A Survey of Research in Sociology and Social Anthropology' Vol. I, ICSSR, New Delhi, 1971.
10. Wilcox, Roger; *The Psychological Consequences of being a Black American.* John Wiley and Sons Inc., New York, 1971.

L.P. Gupta

A STUDY OF SCIENTIFIC ATTITUDE OF COLLEGE TEACHERS

Psychologists have devoted considerable effort to the area of attitudes. Hilgard (1962) has defined attitude as 'an orientation towards or away from some object or concept or situation; a readiness to respond in a predetermined manner to the object, concept or situation'. Allport (1935) has observed that attitude is probably the most distinctive and indispensable concept in social psychology. Attitudes may be crucial part of social role and similar attitudes an aspect of attractiveness (Byrne, 1968). Festinger (1957) and Kiesler (1971) studied the relation between behaviour and attitudes concluding that explicit behaviour provides the pillar around which cognitive apparatus must be draped. Through behaviour one is committed.

If science is considered to be essentially a matter of the discovery of truth then the problem is to determine how these behavioural characteristics are arranged in nature. On the other hand if scientists impose certain explanatory constructs upon their observation of the natural world in order to assist them in understanding certain phenomena and that there is no real order to the universe, then the task is to develop those useful explanatory constructs. Cattel (1957, 1965) has carefully reasoned presentation of the former or 'discovery of the truth' view point whereas George Kelly (1955) has been a vigorous proponent of the latter or 'creative' view point.

Scientific attitude as an aspect of personality may be viewed in both the ways. Nine useful explanatory constructs were identified to define scientific attitude: The scores on these nine useful explanatory constructs give an account of the scientific attitude of the individual. Based on these conceptual model the investigators have developed a Scientific Attitude Scale (SAS) to measure the scientific attitude of the college teachers.

Objectives

The objectives of the study are:

(1) to analyse the differences in the scientific attitude of college teachers in terms of their scores as high (top 27%) and low (bottom 27%) on SAS;
(2) to compare the high and low scoring male and female college teachers to find out the sex differences in their scientific attitude; and
(3) to compare the high and low scoring science and non-science college teachers to find out the significant differences in their scientific attitude.

Design

(*i*) *Tool:* The investigators have developed a Scientific Attitude Scale (SAS). Likert method was followed in identiying the useful explanatory constructive of scientific attitude. Nine constructs, Observation (OB), Open Mindedness (OM), Objectivity (OJ), Intellectual Honesty (IH), Persistence (PR), Creativity (CR), Concept of Self (CS), Self Actualization (SA) and Achievement Motivation (AM) were identified by the experts as useful explanatory constructs of scientific attitude. For each of the constructs two positive and two negative statements were framed. Content validity of the statements was ascertained with the help of the experts. The test comprises 36 statements and the respondents have to mark their answers on a four point scale i.e. always, frequently, occasionally, and never. The test-retest reliability of the test is 0.87. It requires 8-10 minutes to the individual to check the statements on the test.
(*ii*) *Scoring:* Each positive statement is checked on a scale 3 2 1 0 and the negative statement on a scale 0 1 2 3 respectively. The maximum score is 108 and the minimum score is zero. The tool is hand scored.
(*iii*) *Sample:* The sample of the study comprises college teachers who did their M.Phil. during 1977-78 and 1978-79. The teachers come from different colleges affiliated to Madurai Kamaraj University. The details of the sample are as follows:

Table 1

SAMPLE OF THE STUDY

Sex	*Science*	*Non-science*	*Total*
Male	29	29	58
Female	20	22	42

The science teachers belong to the faculties such as Botany, Zoology, Physics, and Chemistry. The non-science teachers belong to the faculties such as Tamil, English, French, Economics and Geography.

Method

The Scientific Attitude Scale (SAS) was administered to the sample . The answered scale sheets were divided into four sections as (1) male science teachers, (2) male non-science

teachers, (3) female science teachers, and (4) female non-science teachers. In each section the high (top 27%) and the low (bottom 27%) groups were chosen for analysis. Mean and S.D. were computed for each of the high and low groups. The significance or otherwise of the differences between the Means of these groups was analysed.

Analysis and Discussion

Table 2

SIGNIFICANCE OF THE DIFFERENCE BETWEEN MEANS OF THE HIGH (TOP 27%) AND LOW (BOTTOM 27%) GROUPS

Teachers	*Group*	*N*	*Mean*	*S.D.*	*'t'*
Male					
Science	high	8	95.00	5.10	9.38**
	low	8	65.38	3.72	
Non-science	high	8	87.38	2.65	9.14**
	low	8	64.00	4.38	
Female					
Science	high	5	93.40	2.06	
	low	5	65.60	3.40	9.84**
Non-science	high	6	83.00	2.94	
	low	6	61.33	0.94	9.91**

** *Significant at 0.01 level.*

All the 't' values in Table 1 are significant beyond 0.01 level. This not only confirms the validity of the tool but also shows that the teachers who score high on SAS are significantly different from those who score low. It may be inferred that the college teachers differ significantly in their scientific attitude. This is true in case of all the four sections where the teachers differ with respect to their professional background and sex.

Table 3

SEX DIFFERENCES IN SCIENTIFIC ATTITUDE

Teachers	*Group*	*N*	*Mean*	*S.D.*	*'t'*
Science					
Male	high	8	95.00	5.10	0.43 n.s.
Female	high	5	93.40	2.06	
Male	low	8	65.38	3.72	0.27 n.s.
Female	low	5	65.60	3.40	
Non-science					
Male	high	8	87.38	2.65	1.88 n.s.
Female	high	6	83.00	2.94	
Male	low	8	64.00	4.38	1.03 n.s.
Female	low	6	61.33	0.94	

n.s. not significant at 0.05 level.

In Table 3 not even a single 't' value is significant at 0.05 level. The male and female college teachers do not seem to differ significantly with respect to scientific attitude. This is true in the case of science and non science teachers and in the high and low groups.

Table 4

SIGNIFICANCE OF THE DIFFERENCES BETWEEN SCIENCE AND NON-SCIENCE COLLEGE TEACHERS

Teachers	*Group*	*N*	*Mean*	*S.D.*	*'t'*
Male					
Science	high	8	95.00	5.10	2.64*
Non-science	high	8	87.38	2.65	
Science	low	8	65.38	3.72	
Non-science	low	8	64.00	4.38	0.49 n.s.
Female					
Science	high	5	93.40	2.06	4.06**
Non-science	high	6	83.00	2.94	
Science	low	5	65.60	3.40	1.74 n.s.
Non-science	low	6	61.33	0.94	

* *Significant at 0.05 level*
** *Significant at 0.01 level*

In Table 4 among the four, only two 't' values are significant one at 0.05 level and another at 0.01 level. From the above observation it may be inferred that the male science and non-science college teachers who have scored high on SAS differ significantly in scientific attitude. Similarly, the high scoring female science and non-science college teachers also differ significantly in scientific attitude. However, the differences between the science and non-science college teachers who scored low are not significant.

An analysis of Means shows that in all the four sections Means are higher in favour of science teachers and significantly higher in favour of science teachers in the high groups. The science teachers of both the sexes seem to have significantly high scientific attitude when compared to the non-science teachers of both the sexes. The high scientific attitude of science teachers may be attributed to their adjustment to the work situations which may lead to the development of 'types' of behaviour patterns as well as specific task behaviours as was observed by Presthus (1962), Thompson (1961) and Whyte (1956).

Conclusions

From the above discussion the following conclusions were made:

(1) The college teachers differ significantly in scientific attitude.
(2) Sex differences are not significant in scientific attitude of college teachers.
(3) The science and non science college teachers differ significantly in scientific attitude. This is true in the case of high groups. However, the low groups do not differ significantly.

(4) The science teachers seem to have high scientific attitude when compared to the non-science teachers.

References

1. Allport, G.W., (1935), Attitudes. In C. Muralison (Ed.) *Hand Book of Social Psychology*. Worcester, Mass. Clark University Press, 1935 P. 798-884.
2. Byrne, D., (1968), Attitudes and Attractions. In L. Berkowitz (Ed.) *Advances in Experimental Psychology*, New York. Academic Press. 1968.
3. Cattel, R.B., (1965), *The Specific Analysis of Personality*: Baltimore Penguin, 1965.
4. Cattel, R.B., (1957), *Personality and Motivation: Structure and Measurement* Yonkers-on-Hudson. World Book. 1957.
5. Festinger, L., (1957), *A theory of cognitive dissonance*, Stanford, Calif: Stanford University Press. 1957.
6. Hilgard, E.R., (1962), *Introduction to Psychology*. New York. Harcourt Brace Javanovich.
7. Kelly, G.A., (1955), *The Psychology of Personal Constructs*. New York; Norton, 1955.
8. Kiesler, C.A., (1971), *The Psychology of commitment: Experiments linking behaviour to belief*. New York. Academic Press 1971.
9. Presthus, R., (1962), *The Organizational Society*, New York; 1962.
10. Thompson, V.A., (1961), *Modern Organization*. New York; 1961.
11. Whyte, W.H., (1956), *The Organization Man*, New York; Simon and Schust; 1956.

Appendix

RJ—SCIENTIFIC ATTITUDE SCALE

Here is a list of 36 statements. Read each carefully and encircle the most appropriate letter (A, F, O, N) which approximates your opinion.

A—Always
F—Frequently
O—Occasionally
N—Never

Please be sure to make one and only choice for each statement and do not skip any. Now go ahead.

(1)	I examine any new situation which interests me.	A F O N
(2)	I do not believe in new ideas.	A F O N
(3)	I do not force my ideas on others.	A F O N
(4)	When I go wrong I try to defend myself.	A F O N
(5)	I complete my task inspite of difficulties.	A F O N
(6)	I follow other's instructions.	A F O N
(7)	I know my abilities.	A F O N
(8)	I perform any task only to satisfy others.	A F O N
(9)	I wish to raise my status.	A F O N
(10)	I believe examining a new situation is a waste of time.	A F O N
(11)	I approve of any new verifiable theory.	A F O N
(12)	I have ready made solutions for any situation.	A F O N
(13)	I accept any theory (idea) only when I am convinced.	A F O N
(14)	I give up my task when disturbed.	A F O N
(15)	I show originality in my actions.	A F O N
(16)	I feel myself worhtless when I go wrong.	A F O N

(17)	I perform any task because I feel like doing it.	A	F	O	N
(18)	I do not welcome even healthier competition.	A	F	O	N
(19)	I study every aspect of a situation which appeals to me.	A	F	O	N
(20)	I do not employ any new technique.	A	F	O	N
(21)	I do not take any decision without analysing the situation.	A	F	O	N
(22)	I welcome any idea which suits my convenience.	A	F	O	N
(23)	I am not distracted when I am performing my task.	A	F	O	N
(24)	I depend upon other's ideas.	A	F	O	N
(25)	I know my weaknesses.	A	F	O	N
(26)	I perform any task only to meet my basic needs.	A	F	O	N
(27)	I wish to become great.	A	F	O	N
(28)	I think analysis of every aspect of a new stimulus is not necessary.	A	F	O	N
(29)	I welcome new ideas.	A	F	O	N
(30)	I force others to work on my instructions.	A	F	O	N
(31)	I admit my mistakes.	A	F	O	N
(32)	I feel uncomfortable when I face difficulties while performing my task.	A	F	O	N
(33)	I show originality in my thought.	A	F	O	N
(34)	I am ashamed of myself, when others blame me.	A	F	O	N
(35)	I perform any task only for self-satisfaction.	A	F	O	N
(36)	I am satisfied with my performance.	A	F	O	N

S. Jaleel Saheb and
S. Sathiyagirirajan

AN ANALYSIS OF QUESTION BANK IN MATHEMATICS

A student, who is being examined, must know how he is going to be examined. This is best indicated by a large number of good quality questions of different form on different units of the prescribed syllabus. All such questions put together would really constitute a question bank. The University Grants Commission in their Plan of Action for Examination Reform (1973)[1] have suggested that we should have the question bank system to eliminate some of the defects of setting examination papers inherent in the present system of university examination and to bring interaction between teaching and evaluation by involving the teachers in the subject in the framing of questions in question bank. The University of Rajasthan, Jaipur, introduced the question bank system from the Academic Session 1975-76 in the 1st Year T.D.C., classes in Science, Commerce and Arts faculties in all subjects. Subsequently it was introduced in the 2nd and 3rd Year T.D.C. classes in the session 1976-77 and 1977-78 respectively.

Unfortunately, the question bank scheme in the University of Rajasthan was discontinued from the session 1978-79 in all the classes due to a feeling in the University administration that it has not worked satisfactorily, without having its proper study.

However, the scheme of question banks is being introduced in a number of universities in the country. This number is increasing year by year. Although, officially, the question bank is withdrawn in the University of Rajasthan, but the students, teachers and papersetters are using them. Therefore, it was thought proper to evaluate the quality of question banks as developed by the University of Rajasthan in different Science subjects to know the efficacy of question banks. This study would be an important step in locating the weaknesses in the question banks as developed by the University of Rajasthan and would become some sort of guide line to other universities in designing and framing the quality question banks. This study becomes more pertinent as the idea of question banks has not been rejected by the students, parents and teachers.[2] In this paper, we present the analysis of question bank of 1st year of Three Year Degree Course (1977-78) in Mathematics which has been revised twice (1976, 1977). This is with the assumption that it must have developed into a quality question bank after two revisions.

A technically sound question bank would consist of questions spread over the varied aspects of different units of a course at a particular level. These individual questions could be of different forms[3]-supply type and selection type and represent different Taxonomical objectives of instructions.[4]

The questions should not be vague, ambiguous and poorly designed. Each question should also be of a certain level of difficulty (easy/average/difficult).

Keeping those points in view the analysis includes the following study: (i) different forms of questions, (ii) number of questions having different cognitive objectives and their break up with regard to form of questions and specifications in terms of learning outcomes, (iii) Estimated difficulty level, (iv) Estimated time and marks, and (v) the effectiveness of construction in terms of directional words, scope, language, situation and format.

Procedure

A group of seven subject experts, each one of them was having a rich experience (more than 20 years) of teaching and evaluation in Mathematics at university level is general and 1st Year TDC, in particular, met for four days from 14th to 17th December, 1978 to analyse the question bank on Mathematics. The group was oriented for 1½ days in the procedure of analysing a question and prevalidation of a question. The group discussed various aspects and developed an analysis card to record the data of their mutually agreed analysis of a particular question in a question bank. The above group meeting was organised under the auspices of a UGC sponsored research project entitled "A study of the efficacy of the internal assessment and question bank based examination system in the faculty of science".

Results and Discussion

There are two question papers in Mathematics for the 1st Year TDC Examination. As such question bank consists of two sections one for Paper 1 and other for Paper 2. The group could complete the analysis of section 1 only and their findings are given below.

(i) *Number of Different Forms of Questions:* The section 1 of question bank, under study is further divided into five units as in the syllabus. The question in question bank is of supply type and can be grouped into two (i) Long answer type (Essay) and (ii) Short answer type. Table 1 shows the number of questions in each unit and their break-up with regard to form of question.

Table 1

Form of question	*No. of questions*					*Total No.*	*Percentage*
	Unit 1	*Unit 2*	*Unit 3*	*Unit 4*	*Unit 5*		
Long Answer Type	39	32	26	30	34	161	82.5%
Short Answer Type	08	08	02	11	05	34	17.5%
Grand Total	47	40	28	41	39	195	100%

We find from the Table 1 that 82.5% questions are of long Answer type and 17.5% questions are of short Answer type. Thus in question bank there is not a single question of selection type-constant Alternative, Multiple Choice, Multiple Facet, Matching etc. although there is plenty of scope to have such questions. It seems that question framers were not

aware of these type of questions and their effectiveness in evaluation, teaching and learning. Each unit of Question Bank should have adequate number of questions of different type-selection and supply type. We suggest that in question bank there should be equal number questions of supply and selection type. When it is contemplated that at least 75% questions in a question paper are to be taken from question bank, the number of questions in a question bank should be large and we feel that for each paper in Mathematics, there should be 500 or more questions of all types to be included as against 195 questions in the present case.

(ii) *Number of Questions in Different Cognitive Objectives:* Bloom-Sander's taxonomy [4-5] was used as a tool in this investigation, because this tool can enable us to ascertain the kind of mental process we are encouraging or perhaps negleting through the questions in the question bank. In fact quality of a question bank is largely determined by the kind of intellectual activity we are encouraging through the questions included in it. The greater the number of questions on higher objectives, the more qualitative is the question bank. The group grouped the questions into four instructional objectives i.e. (i) Knowledge, (ii) Understanding, (iii) Application, and (iv) Skill.

Table 2 shows the number of questions of each type in different instructional objectives in a question bank.

Table 2

Instructional objectives	*No. of questions*					*Total*	*G.T.*	*% of G.T.*
	Unit 1	*Unit 2*	*Unit 3*	*Unit 4*	*Unit 5*			
Knowledge								
(i) L.A.	5	7.5	10	5.5	10	38		
(ii) S.A.	3	6.5	1.5	7	1	19	57	29.23
Understanding								
(i) L.A.	19	13	9	13.5	16	70.5		
(ii) S.A.	4	0.5	0.5	3	2.5	10.5	81	41.54
Application								
(i) L.A.	9	10	7	11	8	45		
(ii) S.A.	1	1	0	1	1.5	4.5	49.5	25.38
Skill								
(i) L.A.	6	1.5	0	0	0	7.5		
(ii) S.A.	0	0	0	0	0	0	7.5	4.10

From Table 2 it is seen that the percentage of questions loaded with memory and information (29.23%) are less as compared to the percentage of questions on understanding (41.5%) and grasp of the subject matter.

There are only 4% questions developing skill, the application questions are 25.38% of the total questions in a question bank. This distribution cannot be considered to be satisfactory because there is much less challenge to the students as well as to the teachers due to lack of problem oriented (Application type) questions in a question bank and one of the fears about the question bank that it might lead to the publication of cheap guides and notes becomes a reality in practice. This has increased the use of unfair means as the

answers can easily be smuggled into the examination hall.

A practical distribution of questions in a question bank to various objectives may be as follows:

1. Knowledge	20% of the total questions
2. Understanding	30% of the total questions
3. Application	40% of the total questions
4. Skill	10% of the total questions

This will ensure a teaching learning and testing at higher mental ability. This will not reduce teaching to merely a mechanical activity of communication of information, learning to memorization without grasp of the subject matter and testing to know the power of memorization. This will, also, reduce the chances of the publications of guides and notes as it will not be easy to produce acceptable solutions of high ability questions.

(iii) *Number of Questions in Different Specifications of a Particular Instructional (Cognitive) Objective:* Specifications of objectives is primarily for understanding the scope and depth of each objective in order to focus the attention of the teachers and evaluators on the terminal behaviour of the student.

Therefore, it has been emphasised that the greater the variety of questions in each specification of the objectives, the more would be the validity of the question bank for purpose of teaching, learning, and testing. With this in view questions in each objective are further analysed with respect to their specifications i.e. particular mental operation in an instructional objective. The analysis is given in Table 3.

Table 3

Objective Specification	*No. of different L.A.*	*Questions forms S.A.*	*Total*	*Percentage 100*
Knowledge				
(i) Recalls	38	19	57	
(ii) Recognises	—	—	—	100
Understanding				
(i) Translates	0.5	—	0.5	0.60
(ii) Gives illustrations	2.5	—	2.5	3.00
(iii) Detects errors	—	—	—	—
(iv) Interprets	—	—	—	—
(v) Compares	3	2	5.0	6.17
(vi) Discriminates	0.5	—	0.5	0.60
(vii) Classifies	1.5	2	3.5	4.30
(viii) Finds relationship	9	1.5	10.5	13.0
(ix) Estimates results	31	1.5	32.5	41.0
(x) Verifies results	22.5	3.5	26.0	32.0
			81	

Application				
(i) Analyses	3.5	—	3.5	7.07
(ii) Tests hypothesis	10	2	12.0	24.24
(iii) Selects appropriate method	25	2.5	27.5	55.56
(iv) Suggests alternative method	1	—	1	2.02
(v) Generalises	5.5	—	5.5	11.11
			49.5	
Skill				
(i) Computation	7.5	—	7.5	100
(ii) Drawing graphs etc.	—	—	—	—
(iii) Reading tables, charts and graphs	—	—	—	—
			7.5	

As indicated in the table the findings of this study are as follows: None of the 57 questions based on "knowledge" objective, required from the student, a mental operation at the recognisation level which is slightly higher mental ability than the recall or memory. Most of the questions based on cognitive objective understanding, are at estimating the results (41%) and verifies the results arrived at (32%). There is not a single question at interpretation level and detection and correction of error in definition etc. We, also note that there is not a single question on Drawing and Reading Tables, Charts and Graphs. Therefore, it is suggested that in a question bank there should be good number of questions based in all the behavioural specifications.

(iv) *Estimated Difficulty Level:* The following table shows the break-up of number of (i) difficult, (ii) easy, and (iii) average questions.

Table 4

Difficulty level	*No. of questions*					*Total*	%
	Unit 1	*Unit 2*	*Unit 3*	*Unit 4*	*Unit 5*		
Difficult	13	12	7	10	17	59	
L.A.	13	12	7	10	17	59	30.00
S.A.	—	—	—	—	—	—	
Easy	7	2	2	—	1	12	6.5
L.A.	3	1	2	—	—	6	
S.A.	4	1	—	—	1	6	
Average	27	26	19	31	21	124	63.5
L.A.	23	19	17	20	17	96	
S.A.	4	7	2	11	4	28	
					G.T.	195	

Thus we find that 63.5% questions are of average difficulty level, 30.0% questions are difficult and 6.5% questions are easy. This break-up could have been good if question bank is only available to the paper setter. But in present case, when the question bank is open to students, the above distribution cannot be considered satisfactory as during learning, he is not faced with the novel and difficult questions.

We feel that 50% questions in a question bank should be difficult i.e. problem oriented 40% of average, and 10% easy. This will help the learner to face new situation with courage and understanding.

(v) *Situation:* Most of the questions (79%) were having familiar situation only 2% questions of "novel" situation and 19% of "unusual" situation. This has weakened the quality of question bank to a great extent. The distribution is shown in Table 5.

Table 5

Situation	*No. of questions in different units*					*Total*	*GT*	*% of GT*
	1	*2*	*3*	*4*	*5*			
Novel								
L.A.	2	1	1	—	—	4		
S.A.	—	—	—	—	—	—	4	2.00
Unusual								
L.A.	8	5	7	5	9	34		
S.A.	1	—	2	—	—	3	37	19.00
Familiar								
L.A.	29	26	18	25	25	123		
S.A.	7	8	—	11	5	31	154	79.00

(vi) *Marks and Time Assigned to Different forms of Questions:* It is envisaged that the paper setters will use the question bank in setting the balanced question papers, teachers will use them in day-to-day assesment and students in their studies. Thus individual questions in a question bank should be assigned the value in terms of marks and estimated time required in answering them. We have grouped the questions in four groups i.e. questions carry 20 marks, 15 marks, 10 marks, and 5 marks. This is in accordance with a maximum of 50 marks in a paper. Table 6 shows the break-up of questions with regard to marks assigned to them.

Table 6

Assigned Marks	*No. of questions*					*Total*
	Unit 1	*Unit 2*	*Unit 3*	*Unit 4*	*Unit 5*	
20 marks						
L.A.	22	17	5	3	10	57
S.A.	—	—	—	—	—	—
15 marks						
L.A.	—	—	—	2	—	2
S.A.	—	—	—	—	—	—
10 marks						
L.A.	16	14	18	25	24	97
S.A.	3	8	—	11	5	27
5 marks						
L.A.	1	1	3	—	—	5
S.A.	5	—	2	—	—	7

We find from the Table 6 that a good number of the long answer questions are in category A and C. Most of the short answer questions are of 10 marks. Therefore, for fair and well designed question papers, it will not be possible to draw questions, at randhm, from each of the units of study.

Table 7 shows the break-up of different form of questions with regard to estimated time required in answering the question.

Table 7

Estimated Time	*No. of questions*					*Total*
	Unit 1	*Unit 2*	*Unit 3*	*Unit 4*	*Unit 5*	
30 Minutes						
L.A.	16	15	5	1	9	46
S.A.	—	—	—	—	—	—
25 Minutes						
L.A.	5	1	—	3	1	10
S.A.	—	—	—	—	—	—
20 Minutes						
L.A.	8	4	10	9	15	46
S.A.	—	—	—	1	—	1
15 Minutes						
L.A.	8	11	5	17	9	50
S.A.	2	1	—	10	1	14
10 Minutes						
L.A.	2	1	6	—	—	9
S.A.	4	7	2	—	4	17
5 Minutes						
L.A.	—	—	—	—	—	—
S.A.	2	—	—	—	—	2

It is interesting to note that there are long answer questions requiring 30 minutes (46 questions), 25 minutes (10 questions), 20 minutes (46 questions), 15 minutes (50 questions), and 10 minutes (9 questions). Most of the short answer questions either require 15 minutes or 10 minutes.Therefore, it is concluded that a paper setter has to pick up questions carefully to strike a balance between number of questions, marks and time.

In fact, it would have been better to include different forms of questions in a question bank carrying equal marks and requiring nearly same time in answering them. This will facilitate to a great extent the framing of a fair and well designed question paper.

(vii) *Effectiveness of Construction:* As mentioned earlier that individual questions in a question bank should not be vague, ambiguous, and poorly constructed, therefore, we examined each question with regard to directional words, scope and language. The results are shown in Table 8.

Table 8

Effectiveness of Construction	*No. of questions in Units*					*Total*	*% of the Total*
	1	*2*	*3*	*4*	*5*		
A. Directional words							
(i)Appropriate	47	33	28	41	38	187	96.0
(ii) Partly appropriate	—	4	—	—	1	5	2.5
(iii) Inappropriate	—	2	—	—	—	3	1.5
B. Scope							
(i) Definite	47	39	28	41	38	193	99.0
(ii) Partly definite	—	—	—	—	1	1	0.5
(iii) Indefinite	—	1	—	—	—	1	0.5
C. Language							
(i) Precise	46	39	28	41	38	192	98.5
(ii) Partly Precise	1	—	—	—	—	1	0.5
(iii) Imprecise	—	1	—	—	1	2	1.00

Thus, we find from Table 8 that the directional words, scope and language of the majority of questions were appropriate (96%) definite (99%) and precise (98.5) respectively. Therefore, it can be concluded that the individual question in a question bank has been constructed well.

Conclusion

In conclusion, one may sum up that question bank in Mathematics for First Paper of First Year TDC class as developed by the University of Rajasthan is not of proper quality as envisaged by UGC in their Plan of Action For Examination Reform. The present question bank needs a complete revision (rather development) keeping in mind the various suggestions given in preceding sections. It is suggested, for the development of quality question bank, a large, number of teachers in the subject may be oriented in the evaluation technology, basic philosophy of question bank scheme, in framing questions of different forms based on all specifications implied under various instructional objectives and content by the University of Rajasthan, Jaipur.When this is done, development of question banks may be restarted as suggested by UGC in their Plan of Action for Examination Reform. UGC should also, take a large scale programme of orienting the teachers in various aspects of question bank in other universities which are in the process of introducing question bank scheme. Without this, we have a fear that they may, also land to same difficulty as University of Rajasthan, Jaipur.

Acknowledgement

We are thankful to Prof.K.N. Mehra and Dr. P.C.Munot of University of Jodhpur, Dr.M.C. Gupta,Dr. L.S. Kothari and Dr. T.C. Jain of University of Rajasthan, Jaipur, Prof. H.P. Sharma of Beawar and Shri R.R.G. Kher, Research Assistant in the project for assisting us in analysing the questions in a question bank.

The financial support of UGC is gratefully acknowledged.

References

1. University Grants Commission,*Examination Reform—A Plan of Action*, UGC, 1973.

2. Sisodia, M.L., A study of attitude and reaction of teachers, parents and students towards question bank scheme—unpublished report.
3. Natarajan, V., "*Towards better questions*" Association of Indian Universities, New Delhi: 1978.
4. Bloom, B.S., *Taxonomy of Educational Objectives,* New York. David Mackay Company, 1968.
5. Sander, N.M., *Classroom Questions*: *What kinds*? New York, Harper and Row, 1966.

M.L. Sisodia, V. Natarajan and G.C. Patni

WHICH DO THEY WANT : IA OR TS ? A COMPARATIVE STUDY

The present examination system, a legacy of the British has been much criticised unequivocally for many of its lapses by different committees and commissions that went into its pros and cons (The University Education Commission, 1948; The Secondary Education Commission, 1954; The Committee on Examination Reforms, 1962; The Education Commission, 1966).

The question today, therefore, is not about whether or not to reform the examination system, but about in which of several directions the reforms should take place.

As early as in 1943 the Norwood Committee suggested that some sort of internal assessment (IA) should replace or at least supplement the traditional system (TS) of examinations. Many of the Commissions mentioned above and several educationists advocated the same (Balabhadra Prasad, 1961; Paranjpye, 1961; Zaidi, 1961; Jaganatha Reddy, 1970; Rama Sarma, 1970; Misra, 1971; Hill, 1972; Examination Reform—A Plan of Action, 1976).

The system was introduced in right earnest in some educatiooal institutions during the 1960's. But no sooner the system was introduced than did the educational institutions began to misuse it (Srivastava, 1977). There was deliberate boosting of marks of some influential candidates. Money, caste, creed, region, religion, sex and servitude seemed to play no insignificant role in the evaluation of student's progress in learning. Where partial IA was tried the correlation between the marks in IA and the marks in external examination were too low and sometimes even negative (Raina, 1963; Kamat, 1968; Bennur, 1971; Venkata Rami Reddy, 1977a). As a result of these the system was withdrawn in many institutions.

However, in recent years the University Grants Commission is making a determined bid to introduce the system starting from the post-graduate level, and a few universities were selected to try the system. Even here, the experience was not very much different. Student agitations were held against the system in some places and some universities have virtually reverted to the old system creating a feeling that internal assessment is a remedy worse than the disease (Amrik Singh, 1971; Venkata Rami Reddy, 1977b). Investigations by Venkata Rami Reddy (1978a) showed that I year post-graduate students, without much practical experience with internal assessment and university life, had a highly favourable attitude towards IA, while their counterparts in the II year had a significant less favourable attitude towards the new system of evaluation.When the I year students (who had a favourable attitude towards IA) were followed up when they were in the II year (after having gained sufficient experience with IA and university life) a significant change in the attitude towards the negative was observed in all sub-groups of students (Venkata Rami Reddy, 1978b).

In the above investigations the attitude of the students towards IA was measured. If they have a negative attitude towards IA do they have a favourable attitude towards TS? Or do they have an unfavourable attitude towards TS also? For example, the fact that an individual marks "agree" for a statement 'caste feelings play a role in IA' does not necessarily indicate that he thinks that caste feelings do not play a role in the traditional. Hence, a comparative assessment of the level of the attitude of students towards the two

systems may throw more light on this burning problem and help the educational administrators, for whom examination reform has become a thorn in the bed, in finding an appropriate solution for the problem.

Further, when we hear that 'students went on an agitation against IA', one does not know precisely whether a majority of the students are really 'against' IA, or only a handful of 'student leaders' and unsocial elements who sometimes like going on agitations to make name for themselves conspire, motivate, and manage the agitation. Not much is known about these questions.

Hence, the present investigation is intended to find out the comparative level of the attitude of post-graduate students of a university (who went on an agitation against IA after undergoing it for one academic year) towards the two systems of evaluation.

The following hypotheses were set up for investigation:

(1) The students in general have a less favourable attitude towards IA than towards TS.

(2) Women students would favour IA more than men students.

(3) Students of the science faculty would have a more favourable attitude towards IA compared to the students of the arts faculty.

(4) A majority of the students would be against IA.

(5) A majority of the students expect to get a lower aggregate if marks in IA were considered along with the marks in the university examination.

(6) Many of those who favour IA prefer only partial IA and not complete IA.

(7) Many of the students would have supported the agitation against IA.

(8) Those who were for the agitation will have a significantly negative attitude towards IA.

Sample

The investigation was conducted on a sample of 444 II year post-graduate students of the MA/MSc/MCom classes. 328 of them were men and 116 were women students. 254 students belonged to the arts faculty while 190 were from the science faculty. All of them had the traditional system of examination upto the undergraduate level.

When the students were admitted into the I year MA/MSc/MCom classes, it was decided by the university to introduce internal assessment for 25% of marks. The Heads of the various departments of the university colleges held discussions in a few meetings and finalised the procedure for implementing IA. It was decided to have three midterm tests one in each term, two terminal tests one each at the end of the first and second terms and a grand test at the end of the third term. The weightage to be given to each test in the process of adding the marks in the different tests was also decided and the students were informed about the same. At the end of the year, after the grand test was also completed, the students went on an agitation demanding scrapping of IA. They did not want the internal assessment marks to be considered at all. The authorities yielded to their demand and scrapped IA and reverted to the TS.

Thus all the 444 stubents (Ss) who participated in the study had undergone partial IA for one academic year. They went on an agitation against the new system of evaluation. However, one does not know whether all of them were against IA and supported the against it.

The Ss belonged to 20 different departments of two colleges, viz., University College of Arts and Commerce and University College of Sciences. Both the colleges were co-educational institutions. There was only one affiliated college (also co-educational) in the university where post-graduate courses were run. The study was limited to the two university colleges. All the students who were present in their respective departments on the days of the investigation served as Ss for the study.

Method

An attitude scale developed by the authors was used in the study. It is an instrument designed to measure the comparative attitude of the respondents towards IA and TS at the same time. It contains 50 statements selected from a preliminary form containing 61 items after carrying out item analysis by the procedure of criterion of internal consistency (Likert, 1932). Its content, construct and predictive validities have been established. Its split-half reliability corrected for full length by Spearman-Brown prophecy formula was .93 (N=50). The instrument was made anonymous to ensure free and frank responses from the Ss.

Scoring

The scoring procedure was also in accordance with Likert (1932) who advocated assigning simple integral weights to the alternative responses instead of going through the rather elaborate procedure of determining normal deviate system of weighting as the two procedures yield almost the same scores (Likert, 1932; Murphy and Likert, 1937; Edwards, 1969). Weights of 5, 4, 3, 2 and 1 were assigned to the five responses strongly agree, agree,. . ., strongly disagree, respectively, in the case of positive statements (which were more supportive of IA than TS). The scoring procedure was reversed in the case of negative statements (which were more supportive of TS compared to IA).

The score on any item could, therefore, range between 1 and 5 with 3 as the mid point. As each statement is a measure of the respondent's relative assent/dissent towards IA/TS and as the statements which were more supportive of IA compared to TS were treated as positive statements the score on any item would indicate the respondent's attitude towards IA. His attitude towards TS as measured by that item could be obtained by reversing the scoring procedure or simply by subtracting his score on the item from 6. For example, if his attitude towards IA as measured by a particular item is 4, his attitude score towards TS would be 2.

As the instrument contains 50 items, one's attitude towards TS could be obtained by subtracting his attitude score towards IA from 300. Since there are 50 items, the score of any individual could range between 50 and 250 with 150 as the neutral point (Shaw and Wright, 1957). 25 of the 50 items in the attitude scale were favourable to IA while the remaining 25 were favourable to TS.

Results and Discussion

Table 1 shows the mean attitude of the different sub-groups of students towards IA and TS. It could be seen that the mean attitude score of the whole group as well as all the subgroups towards IA was above 150 the neutral point. Correspondingly, the mean attitude of all the sub-groups towards TS was less than 150. This indicates that the students had a more favourable attitude towards IA compared to TS.

'*t*' test was applied to see whether the attitude towards IA of the different subgroups was significantly different from the neutral point (150). The results of this *t* test shown along with the mean scores by asterisks indicate that all the subgroups, without any exception, had a significantly positive attitude towards IA. Correspondingly, the mean attitude of all the subgroups towards TS was significantly negative.

Table 1

MEAN ATTITUDE SCORES OF DIFFERENT SUB-GROUPS OF Ss TOWARDS IA AND TS

Group	*N*	*Attitude towards IA/TS*		*Attitude towards IA/TS*		*t*
		M	*SD*	*M*	*SD*	
Whole group	444	159.89***	23.35	140.11***	23.35	8.93***
Arts men	191	153.61*	24.44	146.31*	24.44	2.04*
Arts women	63	168.54***	18.63	131.46***	18.63	7.90***
Science men	137	159.04***	21.73	140.96***	21.73	4.87***
Science women	53	174.43***	18.33	125.57***	18.33	9.71***
Arts	254	157.31***	24.02	142.69***	24.02	4.85***
Science	190	163.33***	21.95	136.67***	21.95	8.37***
Men	328	155.88***	23.50	144.13***	23.50	4.53***
Women	116	171.23***	18.72	128.77**	18.72	12.22***

Note: *** *t significant at 0.001 level*
* *t significant at 0.05 level.*

The difference between the mean attitude towards IA and TS of each of the sub-groups was tested for significance by applying *t* test (correlated means, Garrett, 1973). The results of this *t* test presented in the last column of the table show that each of the sub-groups had a significantly more favourable attitude towards IA than towards TS.

The attitude scores of the Ss were further analysed using analysis of variance of a 2^2 factorial design. As the number of observations in the different cells were unequal the procedure suggested by Winer (1971) and Edwards (1971) was adopted in the analysis of variance.

The results of the analysis of variance presented in Table 2 show that the *F* ratio for sex was 39.15 significant at 0.001 level for 1 and 440 df. This indicates a significant difference between men and women students in their attitude towards IA. An examination of Table 1 shows that the mean score of women students was 171.23, while that of men students was 155.88. This shows that women students were more favourable towards IA compared to men students.

Table 2

RESULTS OF ANALYSIS OF VARIANCE

Source	*SS*	*df*	*MS*	*F*
Sex	229.8	1	229.82	39.15***
Faculty	32.03	1	32.03	5.46*
Sex versus Faculty	.06	1	.06	—
Error		440	5.87	

Note: *** *F significant at 0.001 level*
* *F significant at 0.05 level.*

IA demands sustained hard work on the part of the students than the traditional system as they have to take many examinations throughout the year. Women students probably have more time (and patience?) to spend on their studies compared to their men counterparts who have many avocations, useful or useless, other than their studies. This may be the reason why men students were less favourable to IA than women.

The *F* ratio for faculty was 5.46 significant at 0.05 level indicating a significant difference between the students belonging to the arts and science faculties with regard to their attitude towards IA. Science students (M = 163.33) had a significantly more favourable attitude than arts students (M = 155.88). Similar results were obtained in other investigations (Venkata Rami Reddy, 1978).

The students of the science faculty have a closer contact with the teachers because of practicals, etc., compared to those from the arts faculty. This closer relationship helps develop better understanding between the teacher and the taught which helps to reduce the suspicions the latter may have about the former with regard to the objectivity in evaluation. It is also possible that science students are accustomed to hard work because of practicals, record writing, etc., while very often the arts students wile away their time in the beginning and begin to burn the mid night oil at the end of the year to prepare for the university examination. Greater amount of regularity and hard work throughout the year needed in IA is probably not well relished by the latter group. It is also possible that the questions set in the tests are more precise in the sciences than in arts. Therefore there is a greater possibility for the subjective element to play its role in the evaluation of answers in the arts subjects. This aspect might also have contributed to the aversion of the arts students towards IA.

The interaction effect between sex and faculty was not significant. An analysis of the responses of the Ss to four general questions yielded some interesting results. The first was a direct question whether the students wanted IA or not. It was found that 69% of the students wanted IA while only 31% did not want the new system. When sex and faculty-wise analysis of the responses was made, it was seen that 66% of the men students and 78% of the women students wanted IA. 69% of the students from both the arts and science faculties favoured the new system.

The second question was with regard to the weightage to be given to IA. Among the 307 Ss who favoured IA 73% favoured IA for 25% of marks, while 23% expressed that it should be for 50% of marks and only 4% wanted complete IA. There was not much difference between men and women or between arts and science students in this regard. Considering the whole sample of 444 students who participated in the study it was found that 31% did not want IA at all, 50% wanted it for 25% of marks, 16% preferred it for 50% of marks, while only 3% favoured complete IA.

Probably the students feel that the adventages of both the systems can be reaped if they had only partial IA. Similar results were obtained in other investigations also (Venkata Rami Reddy, 1978a, 1978b).

The third question was about their expectation with regard to the effect of the marks they were awarded in IA, on the aggregate of marks they would get after combining the marks in IA and the marks in the university examination. An analysis of the responses of the Ss showed that 74% of the students thought * that they would get a higher aggregate if marks in IA were also considered. When sex-wise analysis of their responses to this question was carried out, it was found that 70% of the men students and 83% of the women students expected to get a higher aggregate if marks in IA were considered. There was not much difference between the students of arts and science faculties in this regard.

An analysis of the responses of the students to the fourth question, regarding their agitation against IA, showed that *only* 29% of the students liked the students going on an agitation against IA, while 71% were against it. This shows that very few were really against

*The data was collected from the students in the beginning of their II year, before the results of their I year examination were announced.

the new system of evaluation. 66% of the men and 84% of the women were against the agitation. There was not much difference between arts and science students in this regard. The above figures show that only a minority was for the agitation and that they could rule over the majority probably by their aggressive behaviour.

The mean score of the 130 students who supported the agitation (either directly or indirectly) was calculated. It was found that their mean attitude towards IA was 150.32 almost equal to the neutral point (150), while the mean score of those who were against the agitation was 163.85. The difference between these two means was significant at 0.001 level ($t=5.76$ $df=442$). This shows that those who supported the agitation had a less favourable attitude towards IA than those who were against the agitation. But even those who supported the agitation did not have a negative attitude towards IA compared to TS.

Conclusions

It was found in the investigation that:

(1) The students who had experience with IA for one year had a significantly favourable attitude towards IA and a significantly negative attitude towards TS. (2) Women students favoured IA more than men students. (3) Students of the science faculty had a more favourable attitude towards IA compared to their counterparts belonging to the arts faculty. (4) A vast majority of the students were in favour of IA. (5) Among those who favoured IA, only 4% wanted complete IA.73%wanted IA for 25% of marks while 23% wanted it for 50% of marks. (6) A majority of the students thought that they would get a higher aggregate if marks in IA were also considered than what they would get if only the marks in the university examination were taken into account. (7) A majority of the students did not like the agitation against IA; only very few students backed the agitation. (8) Even those who supported the agitation against IA did not have a negative attitude towards the new system. Their attitude score was very nearly equal to the neutral point. (9) However, those who favoured the agitation had a significantly lower mean score compared to those who were against the agitation.

References

1. Amrik Singh, 1971, Welcome address delivered at the 'Seminar on Examinations in Higher Education'. (Report of a seminar held on 27-31, January 1971 at New Delhi). *Examinations in Higher Education.* Inter-University Board of India and Ceylon, Rouse Avenue, New Delhi, pp. 1-5.
2. Balabhadra Prasad, 1961, Address delivered at the 'Seminar on examinations'. *Evaluation in Higher Education.* (A report of the seminars on examination reform organised by the University Grants Commission under the leadership of B.S. Bloom). University Grants Commission, New Delhi, pp. 36-38.
3. Bennur, C.S., 1971, Internal *vs* external assessment. *Examinations in Higher Education.* (Report of a seminar held on 27-31, January 1971 at New Delhi). Inter-University Board of India and Ceylon, Rouse Avenue, New Delhi, pp. 94-98.
4. Edwards, A.L., 1971, *Experimental Design in Psychological Research.* Amerind Publishing Co. Pvt. Ltd., Bombay, pp. 264-267.
5. *Examination Reform,* 1976, (A Plan of Action and the Recommendations of the Zonal Workshops). University Grants Commission, New Delhi, pp. 3-8.
6. Garrett, H.E., 1973, *Statistics in Psychology and Education.* Vakils, Feffer and Simons Pvt. Ltd., Bombay.
7. Hill, W.H., 1972, *Improvement of Examinations.* University of Calicut, Calicut, pp. 50-56.
8. Jaganatha Reddy, D., 1970., Our problems in higher education. *Evaluation in Higher Education* (Proceedings of the seminar held on 22-23 October 1970). S.V. University, Tirupati, pp. 1-19.

9. Kamat, A.R., 1968, *The Internal and External Assessments.* Gokhale Institute of Politics and Economics, Poona.
10. Likert, R., 1932, A technique for the measurement of attitudes. *Archives of Psychology,* 140, pp. 44-53. (In) Fishbin, M.(Ed.) 1967. *Readings in Attitude Theory and Measurement.* John Wiley and Sons, Inc., New York, pp. 90-95.
11. Misra, V.S., 1971, Scheme for internal assessment. *Examinations in Higher Education* (Report of a seminar held on 27-31, January 1971 at New Delhi). Inter-University Board of India and Ceylon, Rouse Avenue, New Delhi, pp. 99-105.
12. Murphy, G. and Likert, R., 1937, *Public Opinion and the Individual.* Harper, New York, pp. 45-55.
13. Paranjpye, R.P., 1961, Inaugural address delivered at the 'Seminar on Examinations'. *Evaluation in Higher Education* (A report of the seminars on examination reform organised by the University Grants Commission under the leadership of B.S. Bloom). University Grants Commission, New Delhi, pp. 32-35.
14. Raina, T.N., 1963, Relation between external examination and internal assessment, *Teacher education, 8,* pp. 25-38.
15. Rama Sarma, M.V. (Ed.), 1970; *Evaluation in Higher Education* (Proceedings of the seminar held on 22-23 October 1970). S.V. University, Tirupati, Preface.
16. *Report of the Education Commission,* 1966, National Council of Educational Research and Training, (1971 reprint), p. 436.
17. *Report of the Secondary Education Commission,* 1954, Government of India, Ministry of Education, New Delhi.
18. *Report of the University Education Commission,* 1948, Government of India, Ministry of Education, New Delhi.
19. *Report on Examination Reforms,* 1962, University Grants Commission, New Delhi.
20. Shaw, M.E. and Wright, J.M., 1967, *Scales for the Measurement of Attitudes.* McGraw-Hill Book Co., New York, pp. 564-565.
21. Srivastava, H.S., 1977, Some conceptional variations in examination reform. *Indian Educational Review,* 12, pp. 1-10.
22. Venkata Rami Reddy. 1977a, Whither internal assessment? *Indian Educational Review, 12,* pp. 11-17.
23. Venkata Rami Reddy, 1977b. Internal assessment: A remedy worse than the disease? *The Educational Quarterly, 28,* pp. 12-15.
24. Venkata Rami Reddy, 1978a, Attitude of post-graduate students towards internal assessment. *Indian Educational Review, 13,* p. 16-32.
25. Venkata Rami Reddy, 1978b, Effect of experience on attitude towards internal assessment—A follow up study. *Journal of Indian Education, 4,* pp. 55-58.
26. Winer, B.J., 1971, *Statistical Principles in Experimental Design.* McGraw-Hill Book Co., New York, pp. 445-449.
27. Zaidi, B.H., 1961, Inaugural address delivered at the 'Seminar on Examinations'. *Evaluation in Higher Education.* (A report of the seminars on examination reform organised by the University Grants Commission under the leadership of B.S. Bloom). University Grants Commission, New Delhi, pp. 41-45.

A. Venkata Rami Reddy and
G. Prathapa Simha

Journal of Higher Education
Vol. 4 No. 3 Spring 1979

Communications

MODERATION OF EXAMINATION RESULTS

Moderation, in common parlance, has come to mean the award of some grace marks to a candidate in an examination, to enable him to pass, or to improve his division, as the need be. The Universities/Institutions conducting examinations are although quite conscious of their responsibility and in their own way take various steps to ensure that they are run as efficiently as possible, but very much are unaware of its one of the said aspects. The moderation of the results cannot be ruled out in any of the University/Institution examinations. The basic assumption is that marginal cases or borderline cases should be given the benefit of the doubt, the doubt that forms a component part of our examination system. There is no gainsaying the fact that it is reflective of the sense of responsibility of our Universities/Institutions/Boards to examinees and an awareness of the problems involved. However, a study of the moderation procedures adopted at various Universities/Institutions/Boards reveals a lot of adhocism and arbitrariness. Usually moderation is not considered as a rule or regulation. It should not be a surprise to say that the way in which the results are moderated is adhoc, arbitrary and absolutely unscientific.

The main purpose of this paper is not to detail out the present position of the moderation procedure but to provide a rational and scientific design for the same, to bring it within the framework of explicitly stated rules and regulations.

In the past, borderline cases have been moderated by the use of a formula which ensures that candidates with the minimum total do not fail on account of small deficits in one or two subjects. In a report of Taylor and Tluanga it has been pointed out that some such procedure is necessary, otherwise, some students who fail are better than others who pass. But the moderation should be based, not on arbitrary 'grace mark', but on a consideration of the passing probabilities. This is the general impression concluded from information received from most of the universities. Most of them have not framed any rules or procedures for moderating the examination results. In case there is any complaint the general practice is to consider the results before they are declared by the committee of examiners and paper setters. The committee reviews the borderline cases and finalises the results. Since the present problem is not only a challenge for the universities but also a crucial problem for the Boards too, it is therefore necessary to meet this problem in a rational and scientific way.

Marking Scheme of the Examinations

Quite often, there is no systematic marking scheme evolved and agreed upon by all examiners. The fact is this that examiners mark on very different standards. One examiner gives 50 where another would have given 25. These large differences between the marks of different examiners were very obvious in previous examinations, but there were no means of knowing whether they reflected differences in the standard of examining or differences in the quality of scripts. There are good colleges and poor colleges and an examinee's scripts may be very much better than those of another. When scripts are thoroughly mixed, each examiner gets a sample representative of the whole area, and all the bundles are statistically equivalent. Any differences now found in the level of marking can be safely attributed to the examiners and not to the candidates. It is then possible to scale all marks to the same norm which means that the performance of all candidates is measured on the same scale. No examination can be valid if this condition is not satisfied. But unfortunately this method is not in practice and this causes a great variation of the marks among the students, which finally meets with problem of moderation of the results. It has also been observed that in some of the Universities/Boards the results are moderated on the basis of the previous results. If the percentage of marks in the current year is lesser or greater than the previous results, the responsible member of the University/Board will sit and bridge up the gap which is really arbitrary, unscientific, adhoc and comic.

Fundamental Difficulties for the Moderation of the Results

In almost every university examination some grace marks are given to borderline cases so as to enable them to pass the examination. But the main objection in the moderation of the examination results is that it is based only on arbitrary rules. There may be rules but they are not scientific. Consider for instance, the rule that upto three marks may be given in a single subject provided that a candidate has an excess of twenty on the aggregate. But if some one asks why only three marks may be given, and not four or five or why an excess of twenty should be required, no reasonable answer is possible. The rule has no scientific basis. Another objection is apparent from the very name 'grace mark', which suggests that the mark is awarded as an act of compassion. It seems very hard that a candidate should fail by only a mark or two, everybody feels sorry for that fellow and agrees to pass him. We find it hard to escape from the idea that a mark is a kind of prize which the candidate has gained, and which must not be taken from him. But marks should not be confused with rewards and prizes.

Criterion to Decide Pass or Fail

It is not merely an important but a very tedious aspect. Given a set of marks which have been assigned to a candidate, by what criteria are we to decide whether he passes or not? This is a question which must be faced at the conclusion of every examination. There are two answers in current use which we may call, it being convenient to have names, the 'absolute system' and the 'grace mark system'. The former system takes the marks as they come, and accepts them at their face value as measures of the candidate performance. If a minimum total is required the marks are added, and if the total is below the prescribed figure the candidate fails. If a pass in several subjects is required, and the candidate is below the line in one of them, even by a single mark, he fails in the examination. The sole virtue of this system is that it is unambiguous, we are never in any doubt as to whether the candidate passes or not. The objection to it is that it rests on a false assumption, for marks are not absolute measures. A mark is surrounded by a penumbra of uncertainty, and when we divide candidates into 'pass' and "fail' in accordance with their marks, the division may depart very widely from that which would correspond to the true order of merit.

If a candidate's true level is just above the pass line in all subjects, and his mark is underestimated in only one subject, he fails in the examination. But the converse is not true.

If a candidate's true level is just below the pass line in all subjects, his marks must be over-estimated in all of them before he can pass. The second contingency is much less likely than the first. The number of good students who fail is therefore larger than the number of bad students who pass. The use of the absolute system thus tends to give a high failure rate. There can be little doubt that this is a contributory cause of the abnormally high failure rates in the examinations of many Indian universities.

The Passing Probability

The uncertainty or imprecision of a mark is specified by its standard error, denoted by 'S.E.' This represents a range of values in which the chance of including the true value is approximately two thirds. If an examiner's standard error is five, he will make an error larger than five about once in three times. He will make an error larger than ten about once in twenty times, and an error larger than fifteen about once in four hundred times. What his actual error is in any particular case, can never be known, since we do not know the true mark at which he is aiming. But we do know, from the standard error, the probability that this true marks will fall in any given range. In particular, we can find the probability that the true mark will be above the pass line.

Consider an examination where the pass mark is 30 and the standard error of examiner is 5. If the examiner assigns a particular mark to a candidate, what are the probabilities that the true mark is (a) above the pass line, (b) below the pass line? We shall call these numbers the 'passing probability' and the 'failing probability'. These can be calculated as follows:

Mark assigned by examiner	20 (—10)	25 (—5)	28 (—2)	29 (—1)	30 Pass	31 (+1)	32 (+2)	35 (+5)	40 (+10)
Passing Probability	2.87	18.41	38.21	46.02	53.98	61.79	69.15	86.43	98.21
Failing Probability	97.13	81.59	61.79	53.98	46.02	38.21	30.85	13.57	1.79

It will be seen that even if the assigned mark is far below the pass line there is still a chance that the candidate deserves to pass and conversely a high mark still leaves open the possibility that he deserves to fail. This state of affairs is inherent in the situation, and it must be recognised. The mark can never tell us with absolute certainty whether a candidate deserves to pass or not. All we can know is the probability that he deserves to pass. This is the only information the marks can give, and our task is to use this information to the best advantage. On the absolute system we ask whether the assigned mark is up to the pass level. On the grace mark system we see if some judicious adjustment can bring it to the pass level. If these systems are to be abandoned we must learn to use the passing probabilities, rather than the marks themselves as the basis of judgment. Supposing there are three examination papers I, II and III each having a minimum passing mark of 35. Then a candidate getting 35, 35, 35 in each of these passes. The probability of anyone in that population (N) to get a combination of 35, 35, 35 can be ascertained. Let it be say 0.16. There are two more candidates Y and Z.

	I	II	III
X	35	35	35
Y	30	36	37
Z	34	41	34

The probability of anyone to get 30,36 and 37 (like Y) is to be found and suppose the probability is 0.08 then he will fail. The probability of anyone to get 34, 41, 34 is also to be found and suppose the probability to 0.19 then he will pass. Thus the pass/fail decision is to be based on probability of the 'passing combination' in a set of papers. If we follow this type of technique in making pass/fail decisions, it would be better to justify the same with scientific basis.

The Examination Research Cell of the Association of Indian Universities is at this moment engaged to find out a rational and scientific technique for the moderation of examination results. The Research Cell has also developed a computer programme which can be used to find out the passing probabilities of the students based on their marks in various subjects or examinations. The decision pass/fail would be based on the comparison of student's passing probability and the minimum passing probability, which is the probability of a student who scores just the minimum passing score in all the examinations/ subjects as set by the University. This method is based on the scientific and statistical probability results and hence objective.

References

1. Agrawal, N.C., "Moderation: Views and suggestion". In Inter University Board of India and Ceylon, *Examinations in Higher Education: Report of a Seminar*, New Delhi 1971: 47-48.
2. Amrik Singh, "Examination: The strategy of change". *New Frontiers in Education.* 3 (2); August 1973; 74-91.
3. Association of Indian Universities, *Monograph on Grading for Universities*, New Delhi, Author, 1976.
4. Bhumi, J.H., "Question setting and moderation". In Inter-University Board of India and Ceylon. *Examinations in Higher Education: Report of a Seminar*, New Delhi, 1971: 49-50.
5. Dave, R.H., and Srivastava, H.S., "Decade of examination reform in India". *N.I.E. Journal* 3 (6); July 69: 69-76.
6. Julka, Satya Pal, "Examination reforms-IV: Some proposals" *University Affairs.* 3 (8) 15 Aug--15 Sept 76: 9-12.
7. Misra, V.S., "Border line cases in Examinations". In Inter-University Board of India and Ceylon. *Examinations in Higher Education: Report of a Seminar*, New Delhi, 1971: 157-63.
8. Natarajan, V., "Continuous assessment of technician student performance". *Education Quarterly.* 23 (2); July 1971: 41-44.
9. Natarajan, V., "Evaluation and measurement in technical education". *Technical Teacher* 8; 1974: 20-24.
10. Natarajan, V., "Evaluation of exams scores" *Technical Teacher* 7; 1973: 57-62.
11. Natarajan, V., Examination reforms; programmes and its outcomes. *University News.* 14 (1); Jan. 1976: 22-23, 25.
12. Natarajan, V,. "New method of construction of practical exams. in surveying". *Journal of Educational Research and Extension.* 9 (3); Jan 1973.
13. Natarajan, V., and Ved Prakash, A new approach for the construction of practical/ laboratory/field work examination. *New Frontiers in Education*, Vol. VII, No. 3, July-Sept. 1978.
14. Natarajan, V. and Ved Prakash. Towards a scientific design of internal assessment in school courses. *School Education*, Vol. IV. No. 1, 1978.
15. Taylor, H.J., and Tluanga, L.N., 'Grace marks: A study of the criteria for the adjustment of examination results.' Gauhati, Examination Research Unit. Gauhati University, 1963.

V. Natarajan and Ved Prakash

EVALUATION OF PERFORMANCE OF CANDIDATES AT POST-GRADUATE EXAMINATIONS

The writer has been for a number of years examiner and member of boards of examiners for M.A., M.Com. and M.S.W. examinations of some universities and the following is written in the light of experience so gained.

A system of double valuation of answer-scripts was introduced many years ago and it has been partly or fully continued till date in many universities. The rule is that in the case of a disparity of more than about fifteen per cent between the marks awarded by an internal and an external examiner, the paper is to come before the board of examiners for revaluation and the board's award will be final.

One reason for the introduction of double valuation is that the internal examiner is likely, in some cases, to have a bias in favour or against particular candidates since he knows them personally. In fact, teachers and students do sometimes testify to the existence or possibility of such bias resulting from personal or social or other considerations. Another possible reason is that experts may take somewhat different objective perspectives in evaluation of answers and it is better to give the candidate the possible benefit of this by having more examiners all of whom may not be available in the same place. In recent years another argument has been advanced. In some cases, the teacher who is the only examiner and is internal is inclined to shirk his teaching work and keep his students pacified by reminding them that he is the man who, after all, is going to have the say. One cannot shut one's eyes to this reality in some places except at the peril of serious impairment of higher education. Presumably as a sort of corollary to this tendency, there emerges a tendency among some students to specialize in cajoling the teacher in preference to concentrating on their studies. The doctrine that the teacher can do no wrong is employed by such teachers and students also—for their own purposes.

Lapses Revealed

However, in the system of double valuation, a number of lapses have been detected sometimes or suspected on theoretical or empirical grounds. Some of these shortcomings may be enumerated as follows:

(1) One or both of the two examiners may have a pronounced general inflationary or deflationary bias in the award of marks. This is inferred from the fact that when the papers are revalued by the board, the award of the board and that of one of the two examiners, which are close to each other, differ by a wide margin from the award of the other examiner.

(2) One or even both of the examiners may be erratic—may be because they take up valuation work on a big scale for a number of places and achieve punctual completion at the expense of a careful assessment.

(3) Both the examiners may award a mark in the middle range so that their valuation may be thought scientific on the ground of absence of disparity.

(4) The external examiner may not be really external. He may belong to one of the colleges or centres affiliated to the same university. In that case he sometimes shows a double bias—a rather liberal valuation for his own centre and a rather strict valuation for the other centres. It is also known that sometimes in cases of disparity of marks awarded by the two examiners which is greater than sixteen per cent—such cases are usually referred to as 'disparity cases'—the third valuation is done by a different internal examiner.

(5) An internal examiner may be a member of the board which finally disposes of the award in disparity cases. A very high mark is awarded by the internal examiner to bring the paper before the board where he can prevail on a colleague in the board to give an award close to his mark.

Apart from these drawbacks, there has been the controversial problem of how exactly the board is to determine the final award. The time available for the board to complete its work is usually very short—a matter of four to ten hours and when the number of disparity cases is large an actual valuation of the paper is only nominal. Moreover, members of the board may not also have sufficient acquaintance with the entire length of the courses of studies. The mark is then, in effect, settled by some formula.

Different formulae have been employed by different boards or by the same board in different years—a factor which makes comparison of examination results difficult or misleading even in two consecutive years in the same course of the same university. Booms

and depressions have been no less in examination results than in the world of economic activity. One may consider the more common formulae.

(1) A simple average is struck whatever be the band of disparity. This procedure makes the rule relating to disparity cases—that they should be given separate consideration —superfluous even while the rule is on the book.

(2) A simple average is struck after a mechanical reduction of disparity—reduction of the higher mark when it is quite high (the limit has to be decided by the board) and increase of the lower mark when it is very low. The board may decide to allow under this process a wider band of disparity—say twenty-five per cent between the two marks and after all this strike the average.

(3) Sometimes, the board decides that if the higher mark is awarded by one who is external to the university this higher mark is to be taken as the final mark. If the higher mark is awarded by an internal examiner the average of two marks—that of the internal and that of the external is to be struck. This is often objected to by examiners as constituting a blanket reflection on the work of internal examiners. There is also the argument that the external examiners are known in some cases to evince little interest in careful assessment.

(4) Sometimes, with or without the kind of adjustment specified under (2), the higher mark, whoever has given it, or a mark close to it or the average between the average of the two marks and the higher mark is taken. In cases where a mark close to the higher one is taken, the marks are also sometimes determined with an element of arbitrariness.

(5) In case a third evaluation is done, the mark awarded by the third examiner is taken as final discarding the other two marks, whatever the relative attainment or standing of the three examiners concerned.

All this is to be viewed against a background of appointment of examiners—sometimes they are distributed very unequally among the centres. Some teachers develop a fanatical emotional commitment to the production of good results for their centre—they cook up the results and claim that the results reflect their teaching calibre—not their manipulating calibre.

In view also of such observed or inferred defects in the working of the system of double evaluation some educationists have argued that a system of single evaluation is to be preferred. The system of single evaluation which is sometimes preferred is one where half of the total number of papers is evalued by internal examiners only and half by external examiners only.

Conclusions

In the light of the above discussion the writer is inclined to the following conclusions.

(1) It is desirable to have a system of double evaluation—one by an internal and the other by one who is external to the university—for personal and social bias among examiners has been widely observed and will take time to vanish.

(2) The internal should value only papers of his centre and not of the other centres in his own university. This will largely eliminate the problem of very unequal distribution of examiners among the centres and also emphasize internal assessment consistent with a mechanism for reduction or rectification of possible bias.

(3) The band of permissible disparity between the marks of the internal and external may continue to be fifteen per cent. In cases of such disparity the average of the two marks is to be taken.

(4) Where disparity exceeds the limit of fifteen per cent, a third valuation by an external examiner is to be arranged. If the three marks are within a band of thirty per cent (double the permissible disparity), the average of the three marks is to be taken. If the band of disparity exceeds thirty per cent, the average of the three marks is to be taken and then the average is to be struck between this average and the middle mark among the three awards. (If two out of the three marks coincide which will be most exceptional, then the average of the three marks is to be taken and the average between it and the majority mark,

in the event of disparity exceeding 30 per cent).

The procedure proposed above, while ensuring that excessive disparity of marks is prevented, at the same time, does not completely ignore any of the assessments. It also ensures relative equity as between the scripts which are disparity cases and those which are not. It prevents the deliberate pulling down of marks of other centres by examiners from a particular centre. It is a preventive to manipulation of marks at the final stage by a board of examiners—which has been the bane of examinations at the highest levels.

The employment of the procedure proposed in this article may result (as happens under other procedures also) in candidates securing a border aggregate mark and missing the higher grade very narrowly. Hence for all candidates two marks may be added (two out of 800 or 1000) to the grand total of their marks in all papers.

The writer is persuaded that dogmatic emphasis on the virtue of having only internal evaluation, on the analogy of what happens in some other countries, is not going to help the progress of higher education. At the same time a system of double evaluation which is crowned by manipulation of marks at the summit does much harm. While no magic formula of perfection is possible, the procedure proposed in this article can go far towards ensuring fairness in evaluation of performance of candidates. Such fairness has been sadly missing in our higher centres of learning very often and the ensuring of the needed fairness is of the highest importance to the cause of learning.

T. Srinivasaraghavan

SEMESTER PATTERN AND INTERNAL ASSESSMENT SYSTEM IN AGRICULTURAL UNIVERSITIES IN INDIA—A CRITICAL REVIEW

The Trimester/Semester pattern of education and the Internal Assessment System (IAS) have been introduced in Agricultural Universities in India about two decades ago. The recent Review Committee of Agricultural Universities (1978) has stated that the working of the Semester and Internal Assessment System in India is not satisfactory and cited several weaknesses in the actual working of the system. Realising this, the ICAR has proposed to hold very soon a National Seminar on Teaching Methods and functioning of Internal Assessment System in Agricultural Universities. In this context, the salient features of the Traditional System and the Semester and IAS are briefly reviewed for proper assessment of the latter; and a modified system is proposed to stimulate thinking and to improve the educational system in the Agricultural Universities.

The Traditional System of Education

The system of education introduced under British rule in India is called the 'Traditional System'. This is chiefly characterised by a continuous session of about nine months of teaching, annual examinations, external evaluation and determination of the success of the students by a single final examination.

Several educationists severely crticised this system, especially the examination aspects. It was pointed out that teaching was subordinated to examinations and that this system promoted selective study and cramming among students. It was also considered that examinations were neither reliable nor valid, that evaluation of answer scripts were subjective and the students wasted most part of the year and studied only at the approach of the examinations.

It is unfair to attribute these defects to the system as such. The British system was adopted eliminating its substance. "The real substance of the British system is the contact between the teacher and the student, and the close supervision of his written work. The student-teacher ratio is so good" and "at the University level Britain has one of the lowest wastage rates in the world" (Singh and Altbach, 1974).

Establishment of Agricultural Universities

Agricultural education was formerly confined to Agricultural Colleges affiliated to traditional Universities. It was felt that agricultural education was badly in need of reform. The University Education Commission (1948-1949) recommended the establishment of Rural Universities for linking education with production programmes. Meanwhile, the American influence also increased in academic activities in India. Two Indo-American teams on Agricultural Research and Education (1954-55 and 1959-60) also recommended the establishment of Agricultural Universities on the pattern of Land Grant College of USA. India accepted their ideas and aid. The first Agricultural University in the country came into being at Pantnagar (U.P.) in 1960. At present there are 21 Agricultural Universities in India, of which only six are mono-campus while the rest are multi-campus Universities.

Trimester/Semester System and Internal Assessment

The Agricultural Universities adopted the trimester/semester pattern of American Universities. This pattern implied the simultaneous adoption of a 'Package of practices', namely: (a) division of each academic year into 3 trimesters (each of 14 weeks duration or of 70 working days) or two semesters (each of 20 weeks or of 100 working days), (b) flexible course credit system, (c) Internal assessment, (d) continuous evaluation, and (e) awarding letter grades.

The main advantages of this system claimed by its protagonists are: (1) Improves the academic standards, (2) Integrates teaching, learning and evaluation, (3) Leads to close and healthy interaction between teacher and the student, (4) Affords scope to student to register courses to the extent of his capacity, (5) Relieves the student from the burden of cramming a lot of subject matter, (6) Final results of a student in a course depends on a series of tests but not on one final examination alone, (7) Evaluation is realistic since the same teacher is involved in teaching and testing and the objective tests would minimise the subjective component of evaluation, (8) Awarding letter grades accommodates variations in the evaluation of the answerscripts, and (9) Brings down to a large extent the wastage (failures or withdrawals) in higher education.

At first, the trimester system of education was adopted by the Agricultural Universities. Soon it was realised that the trimester system suffered from the disadvantage of too many examinations and involved breaking up of a subject into too many small courses to complete them within a trimester. The duration of the trimester was too short to encompass a cropping season and the students were not able to go through all the operations involved in raising crops. Therefore, some of the Universities switched over to semester system which is a little longer in duration. Even the semester was found to suffer from the same disadvantages as those of the trimester. The most serious one is that the semester very often did not coincide with the cropping seasons of the region. Consequently, it was not possible to provide practical experience in the cultivation of a crop from preparatory tillage to harvesting when crop production practical courses were offered for one semester. Crops were not on the field when the corresponding theory courses in crops were offered. This has resulted in the students not getting the required practical training in crop production and protection. The Review Committee on Agricultural Universities (1978) pointed out that "the students are not exposed to the full cycle of agricultural operations". The main reason is the relatively short duration of the semester. Because of late admissions into B.Sc.(Ag) course, the semesters of all classes in a college do not coincide. In a multi-campus University, very often the semesters of all the campuses do not coincide which precludes the conduct of a common terminal external examination.

It was thought that the IAS would raise the academic standards, improve the student discipline and promote better interaction between the teacher and the student. But the experience gained during the past two decades has belied these expectations. The IAS has raised new problems. The Review Committee of Agricultural Universities (1978) has indi-

cated the following problems faced both by students and teachers in the implementation of this system:

(a) The system is functioning only in name. The various essential components like quizzes, objective test and mid-term examination are many times dropped and only the final trimester/semester examinations are held.
(b) There is more emphasis on grades than on learning. The students tend to forget the course after trimester/semester is over.
(c) The grading adopted in the new system is on a liberal scale, since larger failures are considered as a reflection on the staff itself. The system of grading, itself was defective. A student getting seventy-nine per cent was given 'B' grade while another student getting eighty per cent was given 'A' grade. In such instances there was always pressure from students to change the grades. In fact some of the students suggested reversion to external system of evaluation and award of marks instead of grades.
(d) There is wide divergence in the standard of evaluation adopted at different campuses of the same University.
(e) The work-load of teachers has become very heavy in view of too many examinations in the new system and the student-teacher ratio is not satisfactory.

Some of the other drawbacks noticed by the authors in their experience and through enquiries are:

(1) The quality of education has not improved. The comments of the Indian Agricultural Research Services Recruitment Board on the performance of the students bears evidence in this regard; (2) the discipline of the students deteriorated; (3) promoted cramming of the subject by the students; (4) syllabus of the course was not often covered fully and in depth; (5) students adopted all means to slow down the pace of coverage of the subject in the class, so that they need to read only a small portion for the tests; (6) students stop studying beyond what is said in the class; (7) direct or indirect pressure is brought to bear upon the teacher to raise the grades of students; and (8) exposed the teacher to harassment by students.

The Review Committee of Agricultural Universities (1978) suggested that a common terminal examinations may be held in all the campuses of University and setting of the final question paper and valuation of the answer papers may be done by an external examiner. The adoption of these suggestions is difficult under semester system since the interval between two semesters is too short and the expenditure on conduct and evaluation of scripts is huge as large number of courses are offered each semester.

It is evident that the semester and internal assessment system has developed serious weaknesses and is not working satisfactorily. The teachers are over-burdened with setting questions, holding examinations, evaluing answerscripts, tabulating the results and preparing grade reports. Under pressure, Universities have been waiving or modifying the academic regulations in favour of students without considering the consequences of such waiving on teaching and discipline of students. The University administration has not been able to take appropriate and timely action when students indulge in acts of indiscipline on the campus. Infrastructure facilities are most inadequate in most of the campuses.

Eliminating the weaknesses which developed in the implementation of the traditional and semester and IAS in India and incorporating the merits of both the systems, a modified system tentatively termed as Decamester System is proposed for consideration.

Decamester System

The academic year under Decamester System will be from June 15 to April 15 including the final examination period. The B.Sc.(Ag) courses may comprise four Decamesters. The present semester courses in each discipline have to be restructured into Decamester

courses on the basis of subject homogeneity or relationship to the extent possible. In each Decamester five courses are offered on the following pattern:

First Decamester	Basic courses
Second Decamester Third Decamester	Core courses
Final Decamester	Practical crop production course and package of job-oriented courses

Related job-oriented courses are grouped into four or five 'packages' to suit different job requirements. Students are free to select any one package of courses in his final year to gain deeper insight and confidence in the job which he proposes to enter.

There will be three one-hour term examinations at intervals of every two and half months and one three-hour terminal examination (theory and practical). The term examinations are evaluated by the teacher offering the course. The terminal examination has external component. The weightage of marks may be 40 : 60 between term examinations and the terminal examination. The question paper for the terminal examination is set by an external examiner. The external component in the evaluation of the terminal examination may be 100 per cent in theory and 50 : 50 in practical.

A student who fails in more than one course in a Decamester will be detained in that year of standing. The failed students may repeat the courses or take all the examinations (term or terminal) or only the terminal examination at their option when these examinations are held.

Grading is in the form of letter grades as in the present system (A, B, C, D and F). But each of the letter grades, A & B may be subdivided into 3 categories, e.g., Grade A^- (90-93% marks), A (94-97) and A^+ (98-100). This makes possible the placing of students not only into broader categories of A & B but also into sub-categories (A^+, A, A^-) to indicate more realistically similar achievements. It also facilitates relatively easy selection of students for merit awards. The Decamester System facilitates effective practical training in crop production and protection. The students in practical crop production course will be able to undertake all field operations from preparatory tillage to harvest (sometimes even marketing) and gain the much needed work experience in more than one crop. Continuous internal assessment of the students progress by the teacher is achieved through periodical tests. The students are kept alert throughout the period of study and also they have enough time to read and assimilate the subject matter. Common terminal examination can be held in multi-campus Universities. The introduction of external component in evaluation ensures effective course coverage by the teacher and student. Fragmentation of a homogeneous subject matter into different courses is avoided. This facilitates continuous offering of the related topics by a single teacher avoiding the need to repeat the portions of earlier semester courses. Job-oriented package of courses steer the students to a purpose. The grading system suggested reflects better the achievement of the students.

Conclusion

The semester and internal assessment system has not succeeded in agricultural education in India. Besides other weaknesses, the students are not able to acquire the required practical experience in crop production and protection. There is a need to correct the deficiencies. A modified system combining the merits and eliminating the demerits of all the systems so far tried has been suggested in this article for consideration.

References

1. *Report of the Review Committee on Agricultural Universities* (1978), I.C.A.R., New Delhi.
2. Singh, A., and Altbach, P.G., (1974). *The Higher Learning in India.* Vikas Publishing House Pvt. Ltd., Delhi.

3. *Report of the University Education Commission 1948-1949*, (1951). Manager of Publications, Govt. of India, New Delhi.

G.H. Sankara Reddi and
T. Lohi Das

THE MANAGEMENT OF A DEPARTMENT OF STUDIES IN A UNITARY UNIVERSITY

A unitary university is different from a federal university or an affiliated university. A unitary university has one management, has a well defined limit geographical area for operation and it is an urban or town university like the J. N. U., Delhi, Chandigarh, Baroda, Aligarh, Banaras, Viswa-Bharti or Kuruksetra. The departmental administration of a unitary university also differs from the affiliating or federal types of universities which are composed of affiliated colleges. A teaching-cum-affiliating university has teaching departments but these departments of studies have no direct administrative or academic control over government or privately managed affiliated colleges. Hence the management of a department of studies in a unitary university has its own unique characteristics.

The administrative unit in a university is the department which is responsible for teaching, research and dissemination of new knowledge. The department has the responsibility to prepare syllabi, to suggest textbooks, to build the library, to open new specializations in the concerned subject areas, to appoint right type of teachers, to arrange extra-mural lectures and in sum total to upgrade the academic standards so that the teachers and students may grow intellectually. For the smooth functioning of a department there are certain pre-requisities. The departments should enjoy the autonomy in the case of selection of teachers, the admission of students, in framing the syllabi and in selecting the areas of research. The teachers of every department expect to enjoy the academic freedom in teaching and research.

But the defacto autonomy and the real academic freedom are still elusive to the university departments of studies as the university administration tends to be centralized. Many universities still persist to have the feudalistic system of administration which is under the heavy weight of authoritarianism and concentration of power in the hands of a dean. The red tape and delayed decision-making process make the atmosphere suffocating for any educational venture. This is the state of affairs in most of the Indian universities which is illustrated through the presentation of a case study of a university in the pages which follow.

Case Study of a University

Here the university is not named because it represents the general pattern of governance of Indian universities which have borrowed a structure of administration from London or the English universities. The genesis of administrative structure in any modern Indian university is still the Calcutta University Act or Allahabad University Act, or Bombay University Act and modifications are made here and there but no radical change is contemplated. The administration of the unitary university under study, (henceforth it will be named as UU) has a similar pattern which is evident from the list of the officers and authorities as defined in the statutes or the Handbook of the university:

A *Authorities of the University*	*B* *Officers of the University*
Senate	Chancelor
Syndicate	Vice-Chancellor
Faculties	Pro-Vice-Chancellor
Council of Post-Graduate and Research	Deans of Faculties
Board of Studies	Registrar, Librarian, Curator

In the UU there are ten faculties and 84 departments. The largest faculty comprises of 18 departments and consists of 200 teaching members of staff. The smallest faculty of the UU has four members of teaching staff and one deparmental head. Out of the ten faculties, at present, the seven deans are of professors rank while in three faculties the deans belong to the readers cadre.

As is evident from the aforesaid list of officers of the UU administrative unit of the university is the faculty and the administrative powers are exercised by the deans of the faculty. The fact is further supported by the definition of powers of a dean in the Statute. His membership in different bodies of the university further illustrates that the head of the department has very limited powers and is subservient to the dean of the faculty. The rules and regulations, as quoted below from the Statutes, make it evident that the dean is the defacto sovereign of the faculty and the teaching departments under him:

> Appointment of a Dean: The Head of the department shall be appointed by the Syndicate. He shall be a professor in any one of the subjects comprised in the department and failing a professor a reader in any of the subjects comprised in the department. The Dean of the Faculty shall be appointed by the Syndicate from amongst the heads of the departments in the Faculty concerned, provided that in case of the Faculty of Medicine, a person who is not a head of the department or a teacher but is the administrative head of the Medical College may be appointed by the Syndicate as the Dean. The appointment shall be for a period not exceeding three years, and shall be made at an ordinary meeting of the Syndicate, provided that the item concerning the appointment of a dean shall be included in the agenda sent along with the notice of the meeting.

Functions of the Dean shall be:

1. To admit students to his faculty.
2. To attach each student admitted to a teacher in his faculty for tutorial work.
3. To maintain discipline among the students.
4. To maintain accounts relating to the Faculty.
5. To submit returns as per ordinance.
6. To frame time tables and arrange for the programme of work in each term.
7. To look after the equipment and the buildings in which the faculty is located. In case the building is occupied by more than one faculty it shall be in charge of the senior dean.
8. The Dean shall be the Chairman of the Faculty and shall preside over its meetings.

Membership of the Dean:

1. Deans of the Faculties are ex-officio members of the Senate.
2. Two deans are to be elected to the syndicate by the Senate in accordance with the Statutes.
3. The Dean of each Faculty is the member of the Council of Post-Graduate Studies and Research.
4. Deans of the Faculties are the members of the Board.
5. Deans are members of the Board of Extra Mural Studies.
6. Deans are the members of the Committee on Equivalence of Examinations.
7. Dean is the member of the Committee which appoints examiners.
8. Dean is the ex-officio-member of the Committee of Selection for appointment of (professor or reader) of the University. The Head of the Department can be the member if appointed by the Syndicate for the selection of the teaching staff for his own department.

The analysis of the above powers and functions reveal the following facts:

The head of the department has no voice in the selection of his staff because his inclusion in the selection committee depends upon the wishes of the Syndicate, while the

dean is the ex-officio member of the selection committee. Even such matters like admission of students, to assign them to the tutors, or the framing of time table and to arrange the programme of the semester are under the jurisdiction of the dean according to the spirit of the statues. If any head of the department enjoys these privileges it is due to the conventions which have no legal sanction. If a dean wants he can very conveniently take command of all the powers and can leave the head of the department to teach a class which is assigned to him. The head has no power even to sanction a casual leave. He is, by virtue of his headship, a member of the Board of Studies and his aspiration to become the Chairman of the Board of Studies can only be fulfilled if he can win the votes of his colleagues. The head of the department cannot plan and implement the researches for his department because it is here again the dean who fixes his final seal on the topics, areas and quantum of research.

In the UU Syndicate two of the deans are elected out of the ten deans, three teachers of the university get election to the syndicate. There is no electoral board for the heads of the departments. This may mean that all the requirements of the department are to be routed through the dean. The departmental head, who is responsible to the academic growth of one's own department, is being denied direct participation in the decision-making.

To run the faculty administration the statute of the UU is vague and no clear-cut lines of demarcation between the powers of the dean and the departmental heads are made. The Statute has neglected to give directive to the dean that in academic and administrative matters not only the head but the participation of other senior members and in some cases students may be involved. This neglect of the teachers only leads to chaotic conditions if the dean is authoritarian.

The only important role that is assigned to the head is to write annual confidential reports of his sub-ordinates in the department. The only solution for a head, if he wants to have the administrative authority, is to aspire to become a dean initially for a term of 2 years which can be further extended to a total period of 6 years. But the desire may remain only a distant dream if there are many other heads of departments in the faculty and the heads lacks the craftsmanship to press and manipulate the situation in one's own favour. Afterall the appointment of a dean is the privilege of the syndicate and the continuance of the deanship depends on the sweet will of that august body. It is also a truism that the appointments of the deans are not always made on the basis of merits but many other non-academic factors, influence the decision of the syndicate.

Management Issues

Flexibility or capacity to change should be the characteristic of administration of a university. According to this cardinal principle of administration the administrative structure of a UU is to be analyzed. Many questions arise but two are basic. What should be the unit of administration? Who should have more administrative power—dean or the head?

A university is known in the academic world by the teaching and researches of, different departments. This particular university, under survey, is known for its departments like—Economics, Microbiology, Bio-chemistry, Art and Painting, Archaeology, Chemistry, Chemical Engineering, etc. which have attained high standards and students from different parts of the country flock to get admissions to these departments. The departments with the help of their eminent heads and selected teachers have been able to create a scholarly tradition and their standards are comparable to the standards of the national and international universities. Here the department is a significant part in a faculty.

Theoretically also, in a university the teachers owe their allegiance to their subjects and specializations. They have the first bond of fraternity with the scholars of the same subject and teachers of the same department. The department boasts of the minutest specializations within a discipline or a subject and preserves its identification in the teaching, research and extension of the specialized field. A department tends to have an egoistic outlook and a veto within a faculty which may result in an intra departmental rivalries.

The teachers always aspire to upgrade their subject-area for which they require facilities and motivation. This can be better served if more powers are delegated to the departmental head and the job of the dean be limited to serve as the coordinator and one among the equals.

In the university administration the decision-making process is of a diffused nature and it is different in nature from the administration of an industry, army or a government office where major decisions are made by one executive head. In a university the Vice Chancellor is the executive head but many decisions are taken at different levels without the involvement of the Vice Chancellor. The physical directors, the NSS director, the officer commanding of the NCC may take many decisions where the need for final sanction of the Vice Chancellor may not arise. The teachers of a department may decide to experiment a new technique of teaching and assignment without the sanction of the executive head. The teachers may express their opinions through press or speech on any subject of their interest without the permission of the university authority. Sometimes even the head of a department may find it difficult to plan for the equipment, syllabi, researches in one of the latest areas of specialization in one's own discipline and the details are left to the fresh entrant specialist in the subject. The decisions regarding the researches are left to the specialists in the department. Here arises the need for team approach and in a true sense the responsibility to build the department rests on the departmental head, his colleagues and the research scholars.

For the success of administration involvement and participation of the persons concerned in the decision-making process at the departmental level is a pre-requisite. There are two approaches to involve the majority in the decision-making. One of the ways is the upward or 'grass-root' approach through which the ideas are generated and steered from the general body of the teaching members and are approved at the highest level. This is one of the effective ways in which all the staff members, the students and the head of a department take administrative and academic decisions in a democratic way. This is a long and time consuming process but it ensures an acceptance of the decision by the majority. There may be other approaches as well. A department which is headed by an innovative professor needs not only the consensus but the desired leadership for experimentation and innovativeness. In such a situation the ideas are generated by the head or some senior members of the staff and which in turn are accepted by other members of the department. The decisions taken by the head flow down for the acceptance of the majority of the concerned persons. This method may be known as 'banyan tree' in decision-making. As in the banyan tree the trunks of the tree outgrow and take independent roots similarly the decisions of the head and the senior members take their roots in the department. These two approaches, however, have no separate identities but are complementary to each other.

The Committee on Governance of Universities, appointed by the UGC, also suggested in its report (1971) that in a big teaching department the involvement of the more people in the decision making process should be made a matter of principle. For this the committee has recommended that a large teaching department should associate its teachers in teaching, research and administration of the department through a Departmental Committee which should consist of the following:

(1) Head of Department —*Chairman*
(2) Professors in the Department
(3) Two Readers
(4) Two Lecturers

This committee should regularly meet and the minutes of its meetings should be formally recorded, and this committee should not normally take any formal vote but should arrive at decisions on the basis of general consensus. It has also been recommended that the head of the department may convene, from time to time, the general meeting of all the teaching members of staff to discuss the broad academic issues of the department.

In summary, the theme of the paper is that the administrative unit is the department

of studies (teaching) in a unitary university and not the faculty. More powers, therefore, should be assigned to the departmental head. A department has two characteristics: One, it is sub-divided into areas of specialisation; and, second, it has the academic veto. A department can discharge its functions efficiently if it is granted the autonomy which will help the departmental head to strengthen the academic life by guaranteeing the academic freedom to his colleagues. To safeguard the academic freedom the head of the department has to take into consideration three fundamental principles of administration. (i) diffusion of authority, (ii) involvement of all in the decision-making process, and (iii) a combination of grass root or 'banyan tree' approaches in the decision-making process. For the implementation of these principles of administration departmental committees should be established for the involvement of the departmental head, teachers and the students in the decision-making.

D.C. Joshi

SCIENCE KI DUNIYA

SCIENCE KI DUNIYA—Quarterly: an Urdu Science Journal. A venture of the Indian Languages Unit, Council of Scientific & Industrial Research, to serve the cause of Science in Urdu.

Science Ki Duniya would publish articles in popular style, about recent developments in Science and Technology: Information which would be of use to the students, craftsman and public. An excellent medium of Publicity throughout India. Circulation 20,000.

No. of pages	52
Size	Demy Quarto
Prize	50 paise per copy
Annual Subscription	Rs. 4.00 (for 8 issues)

Enquiries regarding Subscriptions, Contributions, Sales Agency and Advertisements to be addressed to

EDITOR "SCIENCE KI DUNIYA"
URDU SCIENCE JOURNAL
COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH
RAFI MARG, NEW DEEHI-110001

All payments may be sent by M.O./D.D./Postal Orders etc. drawn in favour of the Chief (Administration), C.S.I.R., on the above address.

JOURNAL OF INDIAN PSYCHOLOGY

A Journal of Classical Ideas and Current Research

Journal of Indian Psychology is a *journal* of ideas as well as of hard facts. It provides a forum where the past and the present meet to create a Psychology of the future. This intenational journal is devoted to the discussion of classical ideas concerning the nature of man and current research aimed at their empirical testing and application. It publishes both theoretical papers and empirical reports. The emphasis, however, is on the integration of research and theory. Cross-cultural and inter-disciplinary research and studies to integrate normal, abnormal and paranormal experiences so as to stimulate alternative scientific paradigms and heuristic models for the study of man will be of special interest. While the primary focus of this new *journal* is on larger issues having bearing on man's total nature, investigations dealing with specific variables will also be considered for publication.

SUBSCRIPTION

Journal of Indian Psychology is published half-yearly in January and July by Andhra University. The annual subscription rates are as follows :

	India	*Abroad*
Institutional	Rs. 50	US $9
Personal	Rs. 30	US $6

Subscription may be paid by cheques drawn in favour of Journal of **Indian Psychology.** All correspondence relating to subscriptions should be addressed to the Managing Editor, Journal of Indian Psychology, Andhra University Press, Waltair-530 003, India.

Journal of Higher Education
Vol. 4 No. 3 Spring 1979

Book Reviews

Interdisciplinarity: papers presented at the SRHE European Symposium on Interdisciplinary Courses in European Education 13 September 1975. SRHE Occasional Publications. Guildford: Society for Research into Higher Education Ltd., 1977. pp. vii + 58. £ 2.15 (about Rs. 40).

Two words in the subtitle of this publication must be explained, for they are apt to be misunderstood. "European" here means that although twenty-four of the thirty-five participants listed were from England and two were from Scotland; France was represented by three persons, Sweden and the Netherlands by two persons each, and Denmark and West Germany by one person each; which may have been so because the organisers were "greatly aided by a financial contribution from the Council of Europe" (p. iii). "Papers" refers to nine contributions, six of which were from and largely about Britain. This simple arithmetic proves a falsehood: that Britain constitutes between two thirds and three fourths of Europe in the field of higher education. It also encourages the statement of a truism: that titles, even those that are elongated and prosaically accurate, can be misleading.

The average length of the papers is just over four pages in a modest (A5: 21 by 14.8 cm) format. This is uncommonly charitable, and is probably explained by the necessity of discussing all nine in a single day. The publication includes transcripts—edited with some severity—of these discussions. Returning briefly to figures, note that of the fifty-eight pages of text, about forty-six are devoted to papers and discussion: the rest is blankness and half-titles, an elegant fifth.

The descriptive leaflet-cum-order form that came with *Interdisciplinarity* states that "this pamphlet not only stands as a record of the symposium proceedings, but is also a valuable contribution...to the study of higher education interdisciplinarity." Unless value is equated to cost, the second of these claims must be disputed. The profits of symposia tend to accrue, chiefly and often exclusively, to organisers and participants. In general this is true also of the records of symposia. They enable the organisers to prove that people did get together to talk and that money should therefore be made available for more such happenings. For the participants they serve as collective diaries of a sort, as visas and phrase-books for later travels in the land of symposia, and sometimes also as minor diplomas.

The reader, however, is spatially and chronologically removed from the action. A printed account seldom has the imme-

diacy of participation or of mere presence. Papers and discussions form a labyrinthine puzzle that can be solved, and resolved into a unit, only by moving back and forth among its pages; in the process reading several passages several times over. The reader will in all probability skip many portions—which does rather defeat one purpose of reporting such unitary symposia. On the other hand, it could be argued that true enlightenment may not be attained before sufficient torture has been stoically borne; but stoicism is now patently defunct except among symposiasts.

This is not the place to discuss the various possible solutions, none of which would be universally acceptable, to the problem of rendering the proceedings of symposia readily intelligible—and thereby perhaps useful—to those who can only read about them. It would not do, of course, for a reviewer merely to dismiss a publication as impossible or too difficult to read. We will try, therefore, to thread our way to content through the intricacies of form.

The first section, which deals with the "philosophy and background" of interdisciplinarity, is based on an introductory paper by Guy Berger. This will certainly be of interest to the glossarists of higher education, for it provides definitions that were suggested by a working group of the OECD's Centre for Educational Research and Innovation. "*Multidisciplinarity* is a grouping of various disciplines sometimes without apparent inter-connection" (p.3): this term was later dropped because it was thought diffuse and because it "implied a dangerous dichotomy between disciplines with no apparent connection and disciplines assumed to be more or less related" (p. 4).

Accepted were three words that seemed not to be "debased by common usage", and which were "not defined in any sharply divided fashion, but correspond to degrees of interaction between disciplines." "*Pluridisciplinarity* is a grouping of disciplines assumed to be more or less related"; "*transdisciplinarity* establishes a common system of axioms for a set of disciplines"; and, most important of all for this discussion, "*interdisciplinarity* is a close interaction among two or more different disciplines [which] may range from simple communication of ideas to the mutual integration of organising concepts, methodology, [etc.] and organisation of research and education in a fairly large field" (all on p.4).

Berger sums up by observing that "the analysis of known experiments in interdisciplinary teaching shows both the very rich and fruitful character of the interdisciplinarity concept, but equally the very vagueness of it and the uneasy feeling that, because everything is related to everything else, one may do just about anything, and more particularly one can come back to a traditional parting of disciplines" (p.5), and adds that people at CERI have made an attempt to provide "regulatory concepts" (p.5) by trying "to base interdisciplinarity on scientific knowledge connected with analysis of one object or a specific problem, as well as on social pressure coming from the way the university system ties in with social needs" (p. 6). One is left with the impression that Berger, while trying to decide "how to bring down the barriers separating disciplines" (p. 7), and even though his approach is explicitly based on the tackling of specific problems, is much concerned with the pursuit of a contradictory goal: the maintenance, at an unspecified level of purity, of the presumed distinctiveness of each discipline's set of concepts. That this is done while recognising epistemological and institutional problems, and that this seeks to ward off "an haphazard mosaic of juxtaposed elements or such a global approach that it hampers all progress in knowledge" (p. 5), can suggest little more than appropriately laudable intentions.

A few thousands words later, Rolf Schulmeister is unambiguous: "I do not regard interdisciplinarity as a theoretical concept, but as a practical problem. Moreover, there seems to be a dangerous tendency in discussing interdisciplinarity theoretically. This task tends to absorb individuals...so that they neglect reality which is full of unsolved problems and which originally gave rise to the idea of interdisciplinarity. Instead the discussion itself is institutionalised" (pp. 54-55). So much for theories of life based solely on the dissection of corpses that do not exist.

Having devoted much space to discussing the intended foundations of the symposium —intended only, because most participants chose to build on level ground—

it becomes necessary to deal very briefly with the remainder. This would even otherwise have been inevitable, for the nature of the other papers makes both summarising and criticising difficult.

Three papers are descriptions of functioning interdisciplinary courses: D.G. Holloway on four-year degree courses at the University of Keele; J.G. Harvey on degree courses in the environmental sciences at the University of East Anglia; and D.H. Robbins on the School for Independent Study at the N.E. London Polytechnic. These possess the virtue of brevity and do not pretend to be particularly analytical. Keele's undergraduates have one year of common lectures combined with compulsorily broad-based individual study, followed by three years' study of two principal subjects and the study of two subsidiary subjects for one year each. "Breadth of study" (p. 17) is obligatory here as well, but aptly enough students have a broad range from which to choose. With apologies to Berger, the Keele degree would have to be called co-disciplinary; or more impressively, hierarchical-disciplinary.

At East Anglia, all students have a year of virtually identical course-work. During the remaining two years, each pursues six of a possible fourteen courses. Harvey notes that the environmental sciences are particularly suited to interdisciplinary work, which can tempt students to ask for an impossibly wide range of choices. He concludes, using Berger's classification, that this "should be described as a pluri-disciplinary degree course...within which are interdisciplinary course units." (p. 20).

The School that Robbins describes had, in 1975, "had one year's experience in operating the Diploma of Higher Education Programme." The design was based on the view that since "many people went into teacher training who had very little intention of becoming teachers,....there should be a two-year programme of higher education which would give such people much greater vocational flexibility at the end of the two years" (p. 23). Robbins is a master of difficult prose, but it has been possible to understand something of what happened. The students spent six weeks deciding, in groups of twelve each with a tutor, what they would like to study during their two years at the Poly. "There was one set of activities which the student would continue to do with the other students in his group; but for half his time he was obliged to choose a special topic which would attach him to any member of staff throughout the Polytechnic, on a basis of mutual interest" (p. 23). The main problem that arose was a "mismatch" between the problem-focussed approach of the School for Independent Study and the tendency among "members of staff in the faculties... to initiate students into the whole range of a particular subject" (pp. 24-25). The group work that was imposed was found to be too rigid, and in later years students were to be allowed still more freedom of choice.

Both papers in the third section are concerned with administrative matters. Z.C. Szkopiak discusses the administrative arrangements made at the University of Surrey for handling interdisciplinary courses and mentions other possible ways of dealing with the more common difficulties that can arise where such courses are run. J.F.M.C. Aarts and C.J.A.M. van der Linden describe the process by which the organisational structure for the proposed interdisciplinary course at the University of Nijmegen was formulated. Four models were worked out (the chart depicting them has been placed in Szkopiak's paper, perhaps to symbolise collaboration, etc.), and the one that seemed best in the circumstances was selected for development and adoption. The account is business-like, but it is apparent that some very systematic thought was involved in the planning.

In the fourth section, David Edge describes the SISCON (or Science in a Social Context) project; which aims to help the several participating institutions through "the interchange of teaching experience, skills and material" (p. 42). Edge may have been easy to listen to (this contribution was originally on tape), but the veritable forest of single inverted commas in his paper allows us to see no more than the following: The SISCON project encountered problems but could also claim genuine successes, and the problems were more deserving of study than the project's anticipated successes (p. 43).

The second paper in this section, by D.A. Conway, "describes, and attempts to evaluate, the effort which has been made at The Hatfield Polytechnic over the last three years to create within a higher education institution a fully interdisciplinary activity which parallels and complements the Operational Research groups of government and industry which have, in the United Kingdom, been interdisciplinary in character ever since the first recognition of Operational Research as such" (p. 48). Quite so; yes, indeed.

The final paper, by Schulmeister, has already been referred to once. It is called "Methodological issues in evaluating interdisciplinary studies". Behind the mild title lurks a dangerous logic. "Most people seeking to introduce interdisciplinarity into higher education end by proposing organisational models; and the reason for this deficiency seems to be that most plans seek their justification only in their identity with epistemological principles rather than with relevant social problems.... We should rely upon the explosive power of urgent social problems...and should force the process by confronting students and teachers research and education, with these problems, and...disadvantaged social groups" (p. 55). The SRHE, Ltd., cannot have been amused.

By the middle of 1977, the inside back cover of *Interdisciplinarity* tells us, the SRHE had flung upon an unsuspecting world some twenty-eight monographs, seven occasional publications, and four pamphlets. It also publishes a quarterly journal of abstracts and two (apparently annual) registers of research. The harvests of the past two years are likely to have been substantial. The few grains that we have seen compel us to ask: How much of all this manna is digestible, or even edible? For those who can afford cake, that is.

Mukul Dube

Resource Allocation on Education—An Inter, Intra-Country and Inter-Temporal Pattern Analysis by G.D. Sharma, Research Studies: 1, Research Cell in Economics of Education, Association of Indian Universities, Rouse Avenue, New Delhi, 1978, pp. 159. Price Rs. 20.

What is the magnitude of resources devoted to education in India? Is the resource allocation to education adequate and appropriate? How is the allocation of resources made as between Primary, Secondary and Higher stages of education? Are there significant inter-state differences in this regard? Has the pattern tended to change over time? What are the explanatory factors? Considering that education is important to the nation and that vast amount of resources are devoted to it, these are relevant questions to be asked. It is a merit of the book under review here, that it raises these questions and brings under one cover, data not easily available.

The author finds that India devoted 2.5 per cent of GNP in 1971 to education. This may be compared with 6.7 per cent in USA and 7.3 per cent in USSR. However, as compared to neighbouring developing countries such as Pakistan, Nepal and Indonesia, India devoted a larger proportion of its GNP to education. Within the country there are wide variations. The proportion of State Domestic Net Product devoted to education ranged all the way from 10.71 per cent in case of Manipur to 0.36 per cent in case of Jammu & Kashmir. The per capita income of the states showed little relationship with the proportion of SNDP spent on education. Developed states seemed to spend a smaller proportion of SNDP on education and vice-versa. Per student expenditure on education by different states also showed variations unrelated to stage of development. The pattern of allocation of resources on various levels of education also varied as between various states. It is found that except for Kerala at the Primary level and Bihar at the Secondary level, there is no clear relationship between salaries of teachers and allocations to these levels. Significant inter-state variations in salaries paid to teachers at the same level of education have been observed. There seems to be very little planning in allocation of resources to various stages of education. In the budgetary processes the past weighs heavily. The author has also attempted an analysis of the factors influencing grants-in-aid and expenditure on higher education. There is also discussion about UGC grants. The study ends with a few suggestions.

The reviewer would like to bring to notice the following points. In Chapters I

and II, the author seems to be indicating that the rate of return analysis can be used for determining the allocation of resources as between education and other sectors and among various levels of education sector itself. No doubt the author is aware of the limitations of the approach but a more detailed examination would have been helpful. The data relating to rates of return are of 1960's vintage or even earlier and can hardly provide signals for today. On page 9, author's observation that, "although India spent only one-third of GNP spent by the United States and Soviet Union it had a larger number of students in educational institutions than these two countries," is not quite meaningful in as much as relative and absolute amounts are compared. There ought to have been some discussion of various concepts and terms used. For instance, primary and secondary stages may refer to different classes in different countries and even different states. What is meant by expenditure on education? Does it include only public expenditure? Does it include direct as well as indirect expenditure? Does it include expenditure incurred by Departments other than Education Department also? In the computations of salaries, have various types of allowances paid taken into account? In Table 1.6 on page 18, column total all levels, figure relating to Jammu & Kashmir put down as 0.36 is probably a misprint. Limitations of data should also have been discussed. Had the author brought in enrolment rates also into the picture, his analysis would have been more illuminating. Inspite of some of these limitations, policy makers, research workers and educationalists will find this book useful. As Dr. Amrik Singh in Foreword to this book says, "The strength of this book lies in having raised these questions. It has not attempted an answer in every case. And in fact in quite a few cases only the questions are raised and the answer is not even attempted. But the point is that so far even these questions were not being raised and that is why we need to study this book with great care and thoroughness."

V.N. Kothari

Who Goes to College? by Vimal P. Shah and Tara Patel, Rachna Prakashan, Ahemdabad, 1977, pp. 219.

Have we created a category of 'government Brahmins' by granting special privileges to the Scheduled Castes and Scheduled Tribes? Or do these provisions merely provide some chance for underprivileged groups to improve their socio-economic status? These kinds of questions have generated a certain amount of research on the impact of the policy of seat reservation in education and employment. In this context, Shah and Patel's book provides data on who among the Scheduled Castes and Scheduled Tribes in Gujarat apply for scholarships and go on to college. Taking into consideration the problems of unearthing application forms, the authors had available data on 3,630 or 82.51 per cent of Scheduled Castes post-matric scholars and 1,428 or 92.36 per cent from the Scheduled Tribes applicants in 1967-8. This period was compared to 1971-2 when the figures had gone up to 7,487 and 3,390 for the Scheduled Castes and Scheduled Tribes respectively. As in this case, data collection was conducted shortly after the submission of applications, the authors were assured that there was unlikely to be any loss of forms.

The overwhelming number of students from both categories had applied for degree courses. While about ten per cent of Scheduled Castes students and a quarter of the tribals had opted for diploma courses in education, agriculture, engineering and so on, less than one per cent had applied for vocational and technical schools. An Arts degree accounted for the enrolment of over 60 per cent of Scheduled Castes boys and girls, and about half the Scheduled Tribes students in both periods. Science attracted approximately 7 per cent of Scheduled Castes and 14 per cent of the Scheduled Tribes, while for professional degrees like medicine and engineering, enrolments of Scheduled Castes students averaged around 2.5 per cent and that of the Scheduled Tribes was about 1.5 per cent of the total.[1] It is interesting to note that in an all-India assessment of secondary data on Scheduled Castes students Suma Chitnis[2] concluded that while about 13 per cent of students from these castes were enrolled

in diploma and certificate level courses in the 'engineering and non-engineering trades', the enrolment figure in professional and technical university degrees was much lower. For instance, in Maharashtra, only 2.7 Scheduled Castes students were doing engineering degrees. We find then that the situation in Gujarat was not dissimilar. On the basis of such trends Chitnis surmised that enrolment in diploma and certificate level courses affected mobility chances of the Scheduled Castes; it accounted "for the fact that their representation in Class III and even more in Class IV services is noticeably superior to their representation in Class I and Class II services."[3]

As far as academic performance is concerned Shah and Patel found that the majority of students had got a second division in their school leaving examination while a third had obtained a pass degree. Other data[4] indicate that when it comes to higher education, the results of students from these deprived communities deteriorate even further: In a study conducted by the University Grants Commission for the academic year 1965-66 of 4,100 students who had completed graduate and post-graduate degrees in a variety of subjects, a mere 36 per cent had passed; of the rest, a majority had obtained third class degrees. While it is difficult to generalise on the causes of low academic grades, it is possible that a variety of non-academic factors influenced performance. For instance, in an ICSSR sponsored all-India survey[5], 63 per cent of Scheduled Castes college students interviewed said that they would have liked more time to study: in many cases domestic obligations had to be taken care of. Again, a fifth of the students were employed, either in full-time or part-time jobs. Another 37 per cent felt that they could have done with additional tuition and help from teachers. It was also significant that a quarter of the sample complained of discrimination by faculty members as well as the staff of educational institutions.

Our analysis so far shows that Scheduled Castes and Scheduled Tribes students are enrolled in low status courses and are usually low achievers. But equally alarming is the fact that it is the more influential and relatively better off castes and tribes who are the chief recipients of educational and employment benefits. In other words it is the elite among the underprivileged who fare poorly in secondary and higher education. The majority do not even get a chance to go beyond the first few classes in school. Shah and Patel's analysis shows that of the 68 Scheduled Castes listed in Gujarat, 95 per cent of post-matric scholars came from only six castes. These were the Vankar/Maru Vankar, Chamar, Mahyavanshi, Rohit/Samagar/Nalia, Garoda and Bhangi castes. Similarly, five out of a total of 67 Scheduled Tribes were recipients of 85 per cent of scholarships for tribals. These groups were the Dhodia, Chaudhri, Bhil, Dungri Garasia and Gamit/Gavit. The authors concede that for some "unknown reasons" the majority of castes and tribes have been left out in the race to gain educational privileges. If they had conducted some basic ethnographic enquiries into the relative status positions of the important tribes and castes in Gujarat, both the doubts and queries of Shah and Patel as well as those of readers would have been clarified. For instance, in a 1975 survey of sample of Scheduled Castes school and college students, Chitnis[6] found that the Mahars of Maharashtra who constituted a third of the state's Scheduled Castes population, made up 73 per cent of the school and 65 per cent of the college sample. Chitnis explains this privileged position in terms of the early Mahar association with the British as domestic servants, enrolment in the army and the railways. Similarly, a study of special privileges for the Scheduled Castes in Haryana[7] found that of thet hree castes investigated—Chamars, Dhanaks and Balmikis—the Chamars had the largest number of literate households. Again, though all three castes were aware of scholarship facilities for the Scheduled Castes, the Chamars had secured the maximum number of those available. The authors conclude that the advantages of the Chamars over other castes were due largely to their organisation and political influence.

In the absence of any further information on the relative position of the castes and tribes in the present study, it is difficult to come to any conclusion on whether the more influential, financially better off or those high up in the respective hierarchies

were the main beneficiaries of the provisions. Similarly, when dealing with the socio-economic characteristics of the Scheduled Castes and Scheduled Tribes, the authors give a somewhat confusing picture: discussing the occupations of fathers/guardians, they say:

> It is often mentioned that benefits of government assistance for higher education accrue mostly to the children of the privileged families among the Scheduled Castes/Tribes. If we were to treat father's/guardian's occupation as an indicator of social class and view white collar occupations as indicating the privileged families among them, the data of this study do not support the hypothesis that benefits of government assistance for higher education accrue mostly to children coming from the privileged families among them.[8]

While it is true that over half the fathers and guardians of both the Scheduled Castes and Scheduled Tribes students were either farm labourers or mill and factory hands, equally important is the distribution among other occupations: for instance, though only 19.3 per cent and 13.1 per cent of fathers/guardians of Scheduled Castes and Scheduled Tribes students in both periods respectively were clerks, shopkeepers, primary school teachers and social workers, a substantial number were independent farmers owning land, and skilled workers. Undoubtedly the authors are justified in using the usual criteria of respectibility—non-manual work—to determine status. What they overlook however is that 'privilege' is determined not only by the nature of work but also by the financial benefits of employment. In short, a "big farmer" (who owns more than 5 acres of land) may not have the satisfaction of sitting at a desk and working, but he will certainly be able to give his children the same benefits and privileges as a clerk or shopkeeper in a small town can give.

The authors, therefore, appear to have taken too simplistic a view of socio-economic status; they have stressed on the type of work, while what is fundamental to this present discussion is whether those who avail of scholarships could have afforded to pay for their education, and, more importantly, whether they are thereby denying the financially worse off among them the access to similar aid. In fact, the authors' admission that "there are several low-level occupational categories (for example sweepers, mendicants, vendors, farm tenants, etc.) ..which are not represented or inadequately represented among the Scheduled Castes Tribes post-matric scholars"[9] indicates that the really poor of these communities are not the beneficiaries of special provisions. We would be on fairly safe ground then, in joining issue with Shah and Patel on their definition of "privileged families". We are further helped by their unsatisfactory analysis of annual family income. There is no per capita breakdown of income for the two communities as a whole, but only a Table from which arithmetic means and standard deviations "suggest that most of them (the scholars) come from families with only modest income."[10] At the same time, 40 per cent of the families of scholars owned a house, while a tenth of the Scheduled Castes students said that their parents owned land. Among the Scheduled Tribes, half came from landowning families. If we take the average member of the Scheduled Castes and Tribes to be a landless labourer or a manual worker in the towns, then, contrary to the authors' viewpoint, the post-matric scholars in the present study are certainly among the privileged in their communities. Shah and Patel's work only highlights the need to be extra cautious when applying criteria to social groups dissimilar to one's own.

All this is not to detract from the basic value of such a work: it gives us a comprehensive demographic picture of the growth of education among the Scheduled Castes and Scheduled Tribes and identifies the main beneficiaries of special privileges. Choosing two time periods was useful because it gave an idea of the expansion of education among these deprived groups. In a situation where twice as many persons from the general population are literate as compared to the Scheduled Castes, there is need to use all the available techniques to attract more from these communities to education. But, the obverse of enrolment is wastage and dropping-out of the system: Shah and Patel's task ended with providing

us with information on who goes to college. Of greater importance today is who stays on in college. Retention is a problem at every level of Scheduled Castes and Tribes education. It becomes more acute in the realms of higher education.[11]

A case study of the 13 Scheduled Castes and Scheduled Tribes students admitted to the B.Tech. course at the IIT, Bombay in 1973, found that only 5 were still in the system at the end of the second year. All the 13 had been through a year's crash course designed of help them overcome some of their social and academic disadvantages. Despite this facility, four students left after the year was over. Of the remaining nine who were promoted to the first year, one left, and two did very badly and withdrew for a semester. The six who joined the second year did not do much better, as one was asked to leave and two others were on probation because their performance was well below the required level. Thus though five remained in the course at the time of the study, only three appeared to be faring moderately. It was interesting that a number of non-academic factors were responsible for this high-drop-out rate. While special classes helped correct somewhat linguistic handicaps, yet students complained of alienation and antagonism from caste peers. For many, staying in the hostel and eating a different kind of food was a culture shock. Above all, the feeling that they were "inferior student material" because of their position in the social hierarchy appeared to work against "the growth of social relationships."[12]

Yet, as Isaacs' *India's Ex-Untouchables*[13] and Sachchidananda's *The Harijan Elite*[14] indicate, the Scheduled Castes and Scheduled Tribes have benefitted from the Post-Independence system of reservation of seats in education and employment. The beneficiaries of post-matric scholarships throughout the country are increasing in number, as are the number of Scheduled Castes and Scheduled Tribes persons in the profesions and in business. As we have seen, however, mere statistics are not the whole story. Perhaps it is among the girls of these communities that the problems of educability are best expressed. A Scheduled Caste boy has three times as more chances of being literate than a girl from his community. The date from the Gujarat study indicated that the income of girl scholars was substantially higher than that of the boys. In other words, it was only after the families had achieved a certain status were they willing to send their girls on for higher education. Thus if the Scheduled Caste or Tribe boy has problems in persuading his parents that he should go to college, the situation is much more acute for girls. In caste-based occupations such as laundering and scavenging the opportunity cost of sending children, and specially girls to school, is regarded as too high. The problem of education for the underprivileged in India is thus a problem not only one of providing adequate facilities but also of being able to overcome social attitudes and economic constraints.

References

1. I have worked out these figures on the basis of Table 3.3 on page 46.
2. Suma Chitnis, "Education of the Scheduled Castes", *J.H.E.*, Vol. I No. 2 Autumn 1975.
3. *Ibid.*, p. 171.
4. See Malavika Karlekar, Higher Education and the Scheduled Castes, *J.H.E.*, Vol. I No. 2 Autumn 1975, p. 180.
5. *Ibid.*, p. 181.
6. Suma Chitnis, *A Long Way to Go...* Surat, Centre of Social Studies, mimeo, 1977, pp. 24-27.
7. Aggarwal, P.C., and Ashraf, M.S., *Equality Ihrough Privilege*, New Delhi: Shri Ram Centre for Industrial Relations, p. 69.
8. Shah & Patel, p.100.
9. *Ibid.*, p. 195.
10. *Ibid.*, p. 196.
11. Viney Kirpal, "Higher Education for the Scheduled Castes and Tribes", *Economic and Political Weekly*, Vol. XII, Nos. 4 & 5, Jan. 28—Feb. 4, 1978.
12. *Ibid.*; p. 169.
13. Harold Isaacs, *India's Ex-Untouchables.*
14. Sachchidananda, *The Harijan Elite*, Thomson Press (India), 1977.

Malavika Karlekar

MINISTRY OF EDUCATION AND SOCIAL WELFARE

Publications on sale

JOURNALS	*Annual Subscription Rs.*
The Education Quarterly	18.00
Shiksha Vivechan	18.00
Indian Education Abstracts	15.60
Sanskriti	4.00

PUBLICATIONS

General Information for Indian Students going abroad	3.80
Scholarships for study abroad and at home	1.45
Our Cultural Fabric:—	
a. Indian Poetesses—Past & Present Part I	3.90
Part II	4.25
b. Festivals of India	6.25
Report of the Secondary Education Commission	3.00
Hand Book of Physical Education for School Boys	2.25
Report of the Education Commission (Hindi Version)	6.50
Directory of Scientific Research in Indian Universities (U.G.C.)	35.00

(Postage extra)

Also Available

Publications and Periodicals of

UNESCO AND UNIVERSITY GRANTS COMMISSION

and

DISTRICT GAZETTEERS

of

Andhra Pradesh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Nagaland, Orissa, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal.

Catalogues will be supplied on request.

Address all enquiries to:

The Deputy Educational Adviser (Pub.), Ministry of Education and Social Welfare, Room No. 503 'C' Wing, Shastri Bhavan, New Delhi-110001,

Telephone: 386730

THE INDIAN JOURNAL OF SOCIAL WORK

A quarterly brought out in April, July, October and January is devoted to the promotion of professional Social Work, Scientific Interpretation of Social Problems and Advancement of Social Research. The Editor will be glad to consider manuscripts pertaining to Labour Welfare, Personnel Management, Industrial Relations Education, Family and Child Welfare, Medical and Psychiatric Social Work, Mental Hygiene, Criminology, Juvenile Delinquency, Correctional Administration, Social and Moral Hygiene, Physically and Mentally Handicapped, Anthropology and Psychology.

	Annual Subscription	*Back Issue per copy*
India	Rs. 30.00	Rs. 8.00
U.S.A. and Canada	$ 8.00	$ 2.25
Other Foreign Countries	£ 3.00	£ 1.00

Tata Institute of Social Sciences
Sion - Trombay Road, Deonar
Bombay 400088

INDIAN JOURNAL OF PSYCHOMETRY AND EDUCATION

(Half Yearly Journal of the Indian Psychometric and Educational Research Association)

The Journal is published twice a year since 1969. It publishes original work in psychometry, education and allied areas. Editorial enquiries may be addressed to the Associate Editor, *Indian Journal of Psychometry and Education*, Patna Training College Campuses, Patna-800 004.

Subscription and trade enquiries should be made to the Treasurer, Indian Psychometric and Educational Research Association, Patna Training College Campuses, Patna-800 004.

BOOKS AND JOURNALS RECEIVED

Comparative Education Review, Volume 22 No. 2 June 1978 Christopher Baldy Hall, State University of New York at Buffalo, New York.

Comparative Higher Education, Research Trends and bibliography by Philip G. Altbach, Mansell, Lond, 1979.

DEADALUS, Journal of the American Academy of Arts and Sciences, Winter 1979, 7 Linden Street, Harvard University, Cambridge, Massachusetts 02138.

Education in An Imperial Colony, by R.P. Singh, National Publishing House, New Delhi, 1979.

Extreme Response Style as a Personality Factor, by U.C. Jain, National Publishing House, New Delhi, 1979.

History Teaching in India: Perspectives & Programmes for the Eighties, a consolidated report on the UGC workshops on modernization of history courses in the Universities, 1976, UGC.

International Review of Education, Hamburg: UNESCO, October 1978.

Monograph on Grading for Universities, Research Cell, Association of Indian Universities, New Delhi.

Monograph on Internal Assessment for Universities—Research Cell, Association of Indian Universities, New Delhi.

News Letter, International Council for Educational Development, New York.

Philosophy Teaching in India: Perspectives and Programmes, a consolidated report on the UGC workshops on modernization of Philosophy Courses, 1978, UGC.

Teacher Training and Teacher Effectiveness on Experiment in Teacher Behaviour, by N.K. Jangira, National Publishing House, New Delhi, 1979.

The Education Quarterly, Volume XXXI, April 1979, Ministry of Education and Social Welfare, Government of India, New Delhi.

The First Year of Postgraduate Research Study by Jennifer M. Weish, Society for Research in to Higher Education. Guild ford—39003 (1979).

Vestes: The Australian Universities' Review, Volume 22 No. 1 1979, Journal of the Federation of Australian University Staff Associations, Australia.

VESTES—THE AUSTRALIAN UNIVERSITIES REVIEW

A journal of higher education in Australia published by the Federation of Australian University Staff Associations

Vestes has been published since 1958 and aims to concentrate on issues affecting universities and university staff in Australian higher education. Preference is given to those articles dealing with issues of importance to the federation as a professional organisation—e.g. university autonomy, academic freedom, tenure, university government, salaries and salary structures, the role of universities in society, and the relationship of governments to university, particularly on the issue of funding.

Vestes is published twice a year in March and November. An annual subscription may be arranged for $ 5.00 (Australian), post free by surface mail. Enquiries regarding subscription should be addressed to the Business Manager, Vestes, c/- FAUSA, 499 St. Kilda Road, Melbourne, Victoria-3004. Editorial enquiries should be directed to Professor H.J. Cowan, Department of Architectural Science, University of Sydney, Sydney, New South Wales, 2006.

INDIAN EDUCATIONAL REVIEW

A Quarterly Journal of Research

NCERT has reorganized **Indian Educational Review,** one of the top journals in the field of educational research in India.

According to the present editorial policy, the *journal* has a balanced coverage, including articles on all aspects of education and different fields of educational research, with a definite bias for problems relating to Indian education.

The **Indian Educational Review** has so far been emphasizing quantitative research with a sophisticated methodology. It has now been decided that other kinds of research should also be encouraged and if necessary, the importance of the problem should outweigh sophistication of methodology. The contents of the *journal* consist of research articles, research notes, book reviews, research abstracts,, materials on new horizons and other feature articles. The areas covered by the *journal* include sociology of education, economics of education, philosophy and history of education, comparative education, educational technology, work-experience and vocationalization, science and humanities, teacher education, educational psychology and such other allied subjects which have relevance to the Indian situation.

Further details may be obtained from:

General Editor, Indian Educational Review
Journals Cell, NCERT
Shri Aurobindo Marg, New Delhi 110016.

CONTRIBUTIONS TO INDIAN SOCIOLOGY

New Series

This is a biannual journal, sponsored by the Institute of Economic Growth, University of Delhi. It provides a forum for the presentation of research material on Indian and South Asian societies and for the discussion of different approaches to their sociological study.

The January-June 1979 (Vol. 13 No. 1) issue contains:

BRUCE ELLIOT TAPPER	Widows and Goddesses: Female Roles in Deity Symbolism in a South Indian Village
J.H.B. DEN OUDEN	Social Stratification as Expressed through Language: Case Study of a South Indian Village
HENRI STERN	Power in Modern India: Caste or Class? An Approach and Case Study
MICHAEL YORKE	Kinship, Marriage and Ideology among the Raj Gonds: A Tribel System in the Context of South India
LUCY CARROLL	The Muslim Family Laws Ordinance, 1961: Provisions and Procedures—A Reference Paper for Current Research

SUBSCRIPTION RATES

Annual:	Institutions:	Rs 50	$ 12
	Individuals:	Rs 30	$ 10
Single Issue:		Rs 30	$ 8

Subscription and trade enquiries to

VIKAS PUBLISHING HOUSE PVT. LTD.
5 Ansari Road, New Delhi 110002

THE INDIAN HISTORICAL REVIEW

Volume III Number I

This is a biannual journal of the Indian Council of Historical Research, New Delhi, containing articles which, as far as possible, deal with one major theme and discuss its various aspects.

This issue contains:

Richard S. Kannedy	:	*The King in Early South India, As Chieftain and Emperor*
G.K. Rai	:	*Forced Labour in Ancient and Early Medieval India*
B.D. Chattopadhyaya	:	*Origin of the Rajputs: The political, Economic and Social Processes in early Medieval Rajasthan*
B.N.S. Yadava	:	*Problem of the Interaction between Socio-economic Classes in the Early Medieval Complex*
Satish Chandra	:	*Some Institutional Factors in Providing Capital Inputs for the Improvement and Expansion of Cultivation in Medieval India*
M. Athar Ali	:	*Mansab and Imperial Policy under Shah Jahan*
A.R. Kulkarni	:	*The Deshmukhi Watan with special reference to Indapur*
Sumti Sarkar	:	*The Logic of Gandhian Nationalism: Civil Disobedience and the Gandhi-Irwin Pact (1930-1931)*

Subscription Rates

INSTITUTIONS	Annual :	Rs. 50	$ 14 00	£ 5.00
	Single Issue :	Rs. 30	$ 7.50	£ 2.75
INDIVIDUALS	Annual :	Rs. 30	$ 7.50	£ 2.75
	Single Issue :	Rs. 15	$ 4.00	£ 1.50

Subscription and trade inquiries to

VIKAS PUBLISHING HOUSE PVT. LTD.
5, ANSARI ROAD, NEW DELHI - 110002

Journal of Higher Education
Vol. 4 No. 3 Spring 1979

Our Contributors

A. Venkata Rami Reddy is a specialist in Psychology and did quite a good amount of research work on internal assessment, medium of instruction and job satisfaction, which are published in different journals. He is at present Reader in the Department of Education, Sri Venkateswara University College, Tirupati.

Amitabha Ghose has worked as a Senior Research Fellow in major European research organisations and has taught mathematics and computer science in the University of Saskatchewan, Canada. He was a Professor in the Computer Centre at the Indian Institute of Management, Ahmedabad. At present he is a visiting professor at FEOLL, West Germany. Current interests are in the methodology of Social Sciences and Artificial Intelligence. Publications range from Logic and Computer Science to Organization Theory.

Anand S. Dhawle has worked as an expert on Indological Studies in the University of Toronto Library. At present he is working as Librarian and is a member of the faculty at the Indian Institute of Management, Ahmedabad. He has interest in Organisation Theory and Information Science, and has published papers in both these fields.

Anil Baran Ray is Reader in the Department of Political Science at the Burdwan University, West Bengal. His book entitled, *Students and Politics in India* was published simultaneously from India and the United States.

D.C. Joshi is Reader in Higher Education, Faculty of Education and Psychology, M.S. University of Baroda. He has published a number of articles on education and is author of four books on Teacher Education (Hindi).

G.C. Patni was Senior Professor of Mathematics, University of Rajasthan, Jaipur. Worked as Dean, Faculty of Science, Dean, Faculty of Social Sciences and also as Director (Principal) University Science College. Also worked as Director, NCERT Study Group and organised more than a dozen summer institutes for University and College Teachers sponsored by the UGC.

G.H. Sankara Reddi is Professor and University Head, Department of Agronomy Andhra Pradesh Agricultural University, and Principal, S.V. Agricultural College, Tirupati.

G. Prathapa Simha is presently working for his Ph. D. in Philosophy of Education from Sri Vankateswara University, Tirupati.

G. Subramania Pillay is working as Reader in Education, in the Madurai Kamraj University, Madurai. He has published about 20 articles and research papers in various professional journals.

I.C. Pande is Retired Professor and Head of the Centre of Advanced Study in Geology of Panjab University, Chandigarh.

K.G. Gurumurthy is presently working as a Reader in Anthropology at Karnatak University. He has done extensive fieldwork in India and the Philippines in rural, tribal and urban setting. Gurumurthy has published over forty papers in professional journals and books edited by others. He has written five books and successfully completed four research projects: *Graduate Women of Dharwad, Commercial crop and change in two Karnataka Villages, Voting behaviour in an assembly constituency of Karnataka* and *Tibetan refugees of Mundgod.* Presently he is conducting research on Food habits and environmental conditions as causative factors for Cancer Oeasophagus in North rural Karnataka, Alcohalism and channel irrigation, and Tibetan Lamaism. He is also the sub-editor of *Manavika Bharati—bi-annual* Journal published by Karnatak University.

L.P. Gupta teaches Educational Psychology and Philosophy of Education in NREC College, Khurja and has published several papers, currently engaged in Post-Doctoral research on Scheduled Castes—Backward Classes Students.

Malavika Karlekar is Research Associate, Department of Sociology, University of Delhi, Delhi.

M.L. Sisodia is in the Department of Physics, University of Rajasthan, Jaipur. His main areas of research are Microwave Solid and Vacuum devices, Dielectric Studies and Education (Examination Reform and Restructuring of Curriculum). He has a number of books and published 40 papers in research journals. He is Principal Investigator, UGC Project on Examination Reform, Supervisor UGC Book-Writing Project on *Fundamentals of Microwave Electronics* and Supervisor CSIR Project on Noise in Crossed field Amplifier. He is Fellow of the Institute of Electronics and Telecommunication Engineers, India.

M.N. Palsane was Hon. Director of the Centre of Continuing Education of the Poona University from 1973 to 1979 (July); he is Professor and Head of the Department of Experimental Psychology. His main interests are educational psychology, psychometry and social problems. In addition to numerous research and non-research papers in the fields of psychology and education, he is one of the Joint Editors of *Survey of Research in Education.*

Mukul Dube is a postgraduate student of the University of Sussex and works as a freelance writer and photographer and generally in printing and publishing.

R. Jayagopal is Professor and Head of the Department of Adult and Continuing Education, University of Madras. He has contributed a number of articles in various research journals, besides his four books.

Rajeshwar N. Mathur is Reader in the Department of Education in Science and Mathematics in NCERT, New Delhi, where he is working for improvement of instruction and evaluation.

S. Jaleel Saheb is UGC Junior Research Fellow in the Department of Education, M.K. University, Madurai.

S. Sathiyagirirajan is Lecturer in Education, Department of Education, Madurai Kamraj University, Madurai.

T. Lohi Das is Associate Professor and Head, Department of Plant Physiology, Andhra Pradesh Agricultural University, S.V. Agricultural College, Tirupati.

T. Srinivasaraghavan is Professor and Head of the Postgraduate Department of Economics in Orissa Government Education Service, at Gangadhar Meher College, Sambalpur, Orissa. He has been Professor in postgraduate colleges in the Madras and Orissa states and was for a few years doing part-time lecturing at the Department of Labour and Social Welfare, Berhampur University.

V. Natarajan is Project Officer (Exams.), Research Cell, Association of Indian Universities, New Delhi. He has a number of books and research articles published in various reputed journals to his credit. His areas of interest are curriculum development, examinations and technical education etc.

Ved Prakash has been currently working with the Examination Research Cell of the Association of Indian Universities, New Delhi for the last two years. Before taking up the present assignment he was a NCERT Research Fellow in the Department of Examination Research. He is the author of several articles published in various Indian Journals. His interest is in the area of Measurement and Evaluation.

V.N. Kothari is Professor of Economics at M.S. University of Baroda. An author of many studies in finances and economics of education.

INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH JOURNALS

ICSSR Newsletter (Non-priced)
The Newsletter lists all the projects, fellowships, contingent and other grants given to social scientists from time to time and publishes information regarding the activities of the Council. It occasionally carries articles which have a bearing on social sciences in general. It commenced publication in November 1969 and has been brought out regularly.

ICSSR Research Abstracts Quarterly
Abstracts of research reports in the social sciences setting out the objectives, the methodology and the major findings of the research are published in this journal. It was started in October 1971.

Subscription : Inland : Single copy : Rs. 3. Annual: Rs. 10. Foreign : Single copy : p. 30 or $0.75. Annual : £1.00 or $ 2.50.

Indian Dissertation Abstracts
This journal publishes synopses of Ph.D. theses in the social sciences submitted to Indian Universities. Each synopsis gives the name of the university awarding the degree, the year, and the name of the supervisor. It is a quarterly published under the joint auspices of the ICSSR and the Association of Indian Universities. Volume 1, No. 1 was brought out in March 1973.

Subscription : Inland : Single copy : Rs. 5. Annual : Rs. 15. Foreign : Single copy : $ 1. Annual : $ 3.

SUBSCRIPTION AND TRADE ENQUIRIES MAY BE ADDRESSED TO SOCIAL SCIENCE DOCUMENTATION CENTRE, 35 FEROZSHAH ROAD, NEW DELHI-110001.

Indian Psychological Abstracts
This journal publishes short abstracts of research work done in the discipline on Indian themes. It commenced publication as a bi-monthly in January 1972. It is now a quarterly.

Subscription : Inland : Rs. 20 per volume (for individuals), Rs. 30 per volume (for institutions). Foreign : $ 6 per volume (for individuals) and $ 8 per volume, (for institutions).

ICSSR Journal of Abstracts and Reviews : Sociology Social Anthropology
This journal publishes selected reviews of publications in the broad fields indicated in the title of the journal as well as abstracts of research work. It is a half-yearly journal which commenced publication from January-December 1972.

Subscription : Inland : Single copy : Rs. 10. Annual : *Individuals : Rs. 15, Institutions : Rs. 20.* Foreign : Single copy : $ 2. Annual : $ 4.

ICSSR Journal of Abstracts and Reviews : Economics
Abstracts of select articles in Indian Economic periodicals and reviews of selected books published in English in India are published in this journal.

Subscription : Inland : Single copy : Rs. 8 Annual : individual : Rs. 25, Institutions : Rs. 30. Foreign : Single copy : $ 2.50 Annual : $ 8.00.

SUBSCRIPTION AND TRADE ENQUIRIES MAY BE ADDRESSED TO : BEHAVIORAL SCIENCES CENTRE, 32 NETAJI SUBHAS MARG DELHI-110002.

ICSSR Journal of Abstracts and Reviews : Geography
This journal publishes abstracts of research as well as book reviews. It is a half-yearly publication.

Subscription : Inland : Single copy Rs. 10 Annual : Individuals : Rs. 15, Institutions : Rs. 20. Foreign : Single copy : $ 2 Annual : $ 4.

ICSSR Journal of Abstracts and Reviews : Political Science
This journal publishes abstracts of articles in Political Science published in Indian journals, book reviews and list of reviews published in Political Science journals.

Subscription : Inland : Single copy : Rs. 10. Annual : Individuals Rs. 15, Institutions Rs. 20. Foreign : Single copy : $ 2; Annual : $ 4.

SUBSCRIPTION AND TRADE ENQUIRIES MAY BE ADDRESSED TO : CONCEPT PUBLISHING COMPANY. 13-H BALI NAGAR NEW DELHI-110015.

JOURNAL OF LIBRARY AND INFORMATION SCIENCE

The **Journal of Library and Information Science** aims at publishing research papers, reviews, articles, book reviews, etc. in Library and Information Science. The **Journal** shall serve as a media to promote research and discussion of matters concerning Library and Information Science.

The journal is issued twice a year : June & December

Rates of *subscription* are as follows:

Annual: Rs. 30/- (India), £ 5 or $ 10 (Foreign)

Rates of *advertisement* are as follows:

Full page Rs. 300/-, Half page Rs. 200/-

All *correspondance* should be addressed to:

The Chairman, Editorial Board,
Journal of Library and Information Science,
C/o Department of Library Science,
University of Delhi,
Delhi-110007 (India).

COMPARATIVE EDUCATION REVIEW

Comparative Education Review is devoted to the study of education throughout the world and the social, political and economic forces that shape it. Utilizing the entire range of the social science, the **Review** has become the reliable source for the analysis of the place and impact of education in countries other than the United States, Edited by Andreas M. Kazamias and published triannually for the Comparative and International Education Society.

A Special double issue

The State of the Art : Twenty Years of Comparative Education represents an attempt to "Codify" the knowledge accumulated in the field of comparative education over the last two decades. Over 300 pages in length, this special issue brings together essays by ninteen of the most distinguished scholars in the discipline, including

Philip J. Foster	**Richard Merritt**	**Max A. Eckstein**
George Z.F. Bereday	**Donald K. Adams**	**C.T. Hu**
W. Lee Hansen	**John Singleton**	**Rolland Paulston**

One-year subscription: Institutions $20.00, individuals $15.00, students with faculty signature $10.00

The State of the Art (June/October 1977. vol. 21, nos, 2 & 3) : Institutions $13.00. individuals $10 00, bulk (10 or more copies) $7.50

Now published by

The University of Chicago Press, 11030 Langley Avenue, Chicago, Illinois 60628

GANDHI MARG

A monthly journal of the Gandhi Peace Foundation which seeks to probe Gandhian perspectives on the various current national and international problems and to promote normative approaches to their analyses through free discussion by eminent thinkers and activists in diverse fields of human endeavour all over the world.

Send your subscription today by bank draft, postal or money order to:

The Circulation Manager
GANDHI MARG
Gandhi Peace Foundation
221/223 Deen Dayal Upadhyaya Marg
New Delhi 110002

Rates:	*Single copy*	*1 year*	*2 years*	*3 years*
India and South Asia	Rs 3.00	Rs 30.00	Rs 50.00	Rs 75.00
USA, UK and Elsewhere	$ 1.25	$ 12.00	$ 22.00	$ 30.00

(For airmail add $ 10.00 extra per year)

A Collective Voice for Women
by an all Women Group

MANUSHI

A JOURNAL ABOUT WOMEN AND SOCIETY

Manushi hopes to provide:

A Medium for Women to "Speak Out"
To Raise questions in their own minds
To generate a Widespread Debate
And Moves towards a Shared Understanding
For a Common Struggle

Single copy: Rs 2.00
Annual Subscription: Rs 14 (including postage)

You can write to us at:

MANUSHI EDITORIAL COLLECTIVE
C1/202 LAJPAT NAGAR I
NEW DELHI-110024

*Bulletin of Higher Education**

Vol. 4 Nos. 1, 2 & 3 August 1979

CONTENTS

Foreword

1. Members of the University Grants Commission
2. Guidelines for the Re-organisation of Courses at the Plus Three Stage
3. Implementation of the Policy Frame for Higher Education
4. Adult Education and Extension Programmes: Guidelines
5. Recommendations of the UGC Working Group on the Introduction of Regional Languages as Media of Instructions
6. Recommendations of the UGC Working Group on the Regulation of Student Admissions and Facilities to be provided to enable Weaker Sections of Society to take advantage of the Facilities of Higher Education
7. Recommendations of the Joint Consultative Committees on Agricultural, Medical, Teacher and Legal Education
8. Implementation of Measures of Examination Reform
9. Recommendations of the Committee on Support for the Establishment of College Development Councils in the Universities
10. Promotion of the Gandhian Studies in the Universities and Colleges
11. Report on the University Services and Instrumentation Centres Workshop held at Bangalore on 10th & 11th February, 1979
12. Scheme of Career Awards
13. Journal of Higher Education: Volume 3, Numbers 1, 2 & 3, 1977-78: Contents

*Published by the University Grants Commission. Copies can be obtained from the Publication Officer, University Grants Commission, 35 Ferozeshah Road, New Delhi 110001.

UNPRICED PUBLICATIONS OF THE UNIVERSITY GRANTS COMMISSION
(Issued after 1971)*

1. Report of the Committee on Governance of Universities and Colleges Part-1 "Governance of Universities", 1971.
2. Principles and Mechanics of the Semester System, 1971.
3. Examination Reform: A Plan of Action, 1973.
4. Examination Reform: A Plan of Action (including the Recommendations of Zonal Workshops), 1976.
5. Criteria, Guidelines and Pattern of Assistance to Autonomous Colleges, 1973.
6. UGC Bulletin, Vol. 1, No. 1 August 1972.
7. UGC Bulletin, Vol. 1, No. 2 October 1972.
8. Physics in India: Challenges and Opportunities, 1970.
9. Biological Sciences and National Development, 1973.
10. Mathematics in India: Meeting the Challenge, 1974.
11. Proceedings of the Vice-Chancellors Conference, 1975.
12. Support for Research in Science, 1979.
13. Support for Research in Humanities and Social Sciences, 1978.
14. College Science Improvement Programme, 1979.
15. Report of the Regional Seminar on Continuing Education, Hyderabad, 1976.
16. Report of the Seminar on Continuing Education, Poona, 1976.
17. Report of the Regional Conference on Continuing Education, Simla, 1977.
18. Bulletin of Higher Education, Vol. 2, Nos. 1 & 2, November 1976.
19. Bulletin of Higher Education Vol. 2, No. 3, April 1977.
20. Bulletin of Higher Education Vol. 3, Nos. 1, 2 & 3, February 1978.
21. University Development in India (Basic Facts and Figures): 1971-72.
22. University Development in India: 1972-73 to 1976-77: Part I Section A.
23. UGC Annual Report, 1976-77.
24. UGC Annual Report, 1977-78.
25. Development of Higher Education in India: A Policy Frame, 1978.
26. Third All India Educational Survey: Higher Education, 1973-74.
27. India: Pocket Book of University Education, 1972.
28. Report on the Status of Teaching of Sociology and Social Anthropology
    Part I Recommendations, 1978.
    Part II Regional Reports, 1979.
29. Report of the Committee on the Status of Research in Chemistry in Indian Universities, 1979.
30. Report on the Status of Teaching and Research in Geology and Geophysics in India, 1979.

*Complete list on the publications can be obtained from the Publication Officer, University Grants Commission, 35, Ferozeshah Road, New Delhi 110001.

*PRICED PUBLICATIONS OF THE UNIVERSITY GRANTS COMMISSION**

1.	Botany in Indian Universities, 1963	Rs. 3.50
2.	Biochemistry in Indian Universities, 1963	Rs. 5.60
3.	Chemistry in Indian Universities, 1963	Rs. 2.75
4.	Report on Examination Reform, 1962	Rs. 2.50
5.	Report of the Seminar on Postgraduate Teaching and Research in History, 1964	Rs. 2.20
6.	Chemistry: Design for Innovation (Proceedings of a Conference held in Srinagar and Bangalore—June, 1969), 1970	Rs. 3.50
7.	University Development in India, 1961–62	Rs. 3.50
8.	University Development in India, 1962–63	Rs. 4.25
9.	University Development in India, 1963–64	Rs. 7.25
10.	University Development in India, 1964–65	Rs. 12.15
11.	University Development in India, 1965–66	Rs. 10.00
12.	University Development in India, 1966–67	Rs. 10.00
13.	University Development in India, 1967–68	Rs. 15.00
14.	University Development in India, 1968–69	Rs. 18.20
15.	University Development in India, 1970–71	Rs. 18.80
16.	Statistics in Indian Universities, 1970	Rs. 6.10
17.	Directory of Scientific Research in Indian Universities, 1974	Rs. 35.00

* Available on sale with the Assistant Education Officer (Publication), Ministry of Education & Social Welfare, Sales Depot, 511, C Wing, Shastri Bhavan, New Delhi-1.

Note: Complete List of Priced Publications can be obtained from the Publication Officer, University Grants Commission, 35-Ferozeshah Road, New Delhi-110 001.

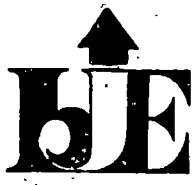
IN FORTHCOMING ISSUES

CRISIS OF THE PROFESSORIATE; AGRICULTURAL EXTENSION CURRICULUM; POLICY ANALYSIS AND MANAGERIAL CRISIS IN HIGHER EDUCATION; CHANGE IN HIGHER EDUCATION; UNIVERSITIES IN THE 80's; COMPARATIVE HIGHER EDUCATION; ANALYSIS OF TEACHING METHODS; HIGHER EDUCATION AND RECENT TRENDS.



JOURNAL OF HIGHER EDUCATION

Vol. 9 No. 1 Monsoon 1983



Editorial Board

Dr. (Mrs.) Madhuri R. Shah
Chairman, UGC

Professor Rais Ahmed
Vice-Chairman, UGC

Professor S. Manzoor Alam
Professor J.B. Chitambar
Professor M.S. Gore
Professor Tapas Majumdar
Professor M.V. Mathur
Professor R.C. Mehrotra
Professor B. Ramachandra Rao
Professor R. Rath
Professor M. Santappa
Professor H.L. Sharma
Professor R.S. Sharma
Professor S. Shukla
Honorary Editor

Publication Officer
Shri V. Appa Rao

Assistant Editor
Shri Prem Varma

© University Grants Commission
New Delhi

Printed and Published by Dr. D. Shankar Narayan, Secretary, University Grants Commission, New Delhi-2. Printers: G.C. Printers, New Delhi-2.

ISSN 0252 – 0397

JOURNAL OF HIGHER EDUCATION

Vol. 9 No. 1 Monsoon 1983

UNIVERSITY GRANTS COMMISSION
NEW DELHI

The *Journal of Higher Education* is published by the University Grants Commission to promote discussion of contemporary problems and policies in, as well as scholarly study of higher education.

Views expressed in all contributions are those of the authors. The Commission or the *Journal* are not committed to them.

Contributions in duplicate typescript and books for review (2 copies) may be addressed to the Honorary Editor.

All editorial enquiries may be addressed to the Assistant Editor, *Journal of Higher Education*, University Grants Commission, 35-Ferozeshah Road, New Delhi-110001.

The *Journal* is issued thrice a year: Monsoon, Autumn and Spring.

Subscribers to the *Journal* will also receive a copy of the *Bulletin of Higher Education* published by the Commission thrice a year. The *Bulletin* carries official information from the University Grants Commission.

Rates of subscription for the *Journal* are as follows: Annual Rs. 20 (India), £ 3 or $ 8 (Foreign) : Single copy Rs. 8 (India), £ 1 or $ 3 (Foreign). For bona fide individual teachers and students in India, Rs. 10 per annum.

Enquiries regarding subscription may be addressed to the Assistant Educational Adviser, Ministry of Education and Culture, Ex. A.F.O. Hutments, Dr. Rajendra Prasad Road, New Delhi-110 001.

CONTENTS

Education and Democracy	*G.W. Rama*	...	1
Indian Education : The Anti-Cultural-Involution	*Dinesh Mohan*	...	21
Institutional Quality, Student Input and Output: Analysis of Six Indian Universities	*M.A. Khader and Sushila Singhal*	...	35
The Higher Education Scene in Britain Today	*Asa Briggs*	...	47
The University as an Institution : Present Problems and Future Trends	*Dietrich Goldschmidt*	...	65

Notes from Research

Social Costs of Reservation in Higher Education	*B.B. Chatterjee*	...	77
Student Evaluation of Instructors	*Christopher Orpen*	...	89
Participation, Faculty Satisfaction and Perceived Institutional Climate	*R.C. Srivastava*	...	94
Abilities and Subject Specialization	*J.K. Pillai and P.J. Gabriel*	...	108
Agricultural Research Service Scientists: Their Value Orientation	*R.K. Samanta*	...	114

Communications

The Child Development Curriculum and its Relevance to the Job Competencies Expected in the Field	*Amita Verma and T.S. Saraswathi*	...	119
Over-crowding in University and College Hostels	*M.V. Soundara Rajan*	...	124
International Symposium on Problems of Development of Under-privileged Communities in the Third World Countries	*Sunil Misra*	...	131
Determinants of Levels of Higher Education in States	*S.C. Seddey and R.K. Gupta*	...	133

Book Reviews

Higher Education in the Third World : Themes and Variations by Philip G. Altbach — (*I*) *Amrik Singh* ... 145; (*II*) *Krishna Kumar* ... 146

Technological and Social Complexity by Maurice N. Richter — *Dipankar Gupta* ... 148

Culture, Politics and Critical Academics by Asoke Basu — *Buddhadeva Bhattacharyya* ... 149

Books and Journals Received

Our Contributors

Journal of Higher Education
Vol. 9 No. 1 Monsoon 1983

Education and Democracy

G.W. RAMA

Liberal thinking introduced and developed systematically the problem of the relationship between democracy and the educational process. It did not, however, take up the subject of popular education—which, as will be seen later, originated with protestantism—but instead it emphasized a basic concern: that of forming the individual so he may fulfill himself autonomously. John Stuart Mill wrote: "He who lets the world, or his own portion of it, choose his plan of life for him, has no need of any other faculty than the ape-like one of imitation. He who chooses his plan for himself, employs all his faculties. He must use observation to see, reasoning and judgement to foresee, activity togather materials for decision, discrimination to decide, and when he has decided, firmness and self-control to hold to his deliberate decision".[1]

This concept of the individual, defined as a free entity in the face of society and power, finds its expression through two interconnected categories: the citizen and the pupil. The first, in order to emerge, requires a formation period, leading to the second category, which in turn is defined by the development of the intellectual and personality characteristics pointed out by Stuart Mill as indispensable for being able to choose.

Reason and freedom are the central concepts of liberalism. To affirm both presupposes denying the existence of *absolute truth,* presupposes that "human knowledge is never complete and is always fallible"[2] and therefore: "That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. He cannot rightfully be compelled to do or forbear because it will be better for him to do so, because it will make him happier, because, in the opinions of others, to do so would be wise, or even right."[3]

The development of this view implies a high degree of confidence in human capacity for seeking truth and being free. The privileged instrument of reason is scientific knowledge, whose development is encouraged while at the same time the beliefs considered sacred and closed to all discussion are excluded. Orthodoxy is rejected for being "the grave of intelligence, no matter what orthodoxy it may be".[4]

Obviously the categories of citizen and educatee are, for liberal thinking, no more than abstract categories, construction as a projection of the bourgeois condition and unconnected with any specific class or power connotation. That is why the categories are concerned as independent of the conditions and the alienations to which the specific social groups are subjected.

This is not the place to ponder the social counterpart left out by liberal thinking. What is relevant for our purpose is to underline a critical attitude, the sense of doubt and conflict of opinions in the making of knowledge.

Classic Marxist thinking continues the Enlightenment tradition around the two keys of reason and freedom but de-mythifying them, showing on the one hand the ideological character and the limitations imposed on reason in the bourgeois society and, on the other, considering the problem of freedom within the widest framework of the relationship of man to his work, bringing into focus the alienations existing at this level.

Gramsci, on dealing specifically with the problems derived from the relationship between culture and school organization, showed that the practice of dividing education into classical and professional is the way to impose a form of segmented socialization: the ruling classes and the intellectuals have access to the former while the lower classes are the recipients of the latter. In this sense, the spread of mass education had instrumental purposes: to prepare skilled manpower according to the new requirements of the production apparatus and to reproduce the class situation. The object of this unequal education—one for dominating and the other for accepting domination—is to legitimize and consolidate the working of the capitalist system. Rejecting these goals, Gramsci took up again the subject of political formation and proposed the unitary school, which combines intellectual work with manual labor, scientific and technical practice with humanist formation": "...it cannot only mean that an unskilled laborer could be converted into a skilled worker but that every 'citizen' could become a 'ruler' and that the society could place him, even 'abstractly' in general conditions to be so: political democracy tends to make the rulers coincide with the ruled (in the sense of government with the agreement of the governed) ensuring for all the governed free apprenticeship of abilities and of general technical preparation, necessary for this purpose".

For Gramsci, the most suitable way of breaking the oligarchic school consisted of replacing it by the single school (elementary-secondary)"...which takes the child up to the very threshhold of professional choice and, at the same time, forms him as a person able to think, to study, to direct or control those who direct".[5] As the key factors in education, he pointed out the ability to think and to control those who direct, and here his thinking is connected

with one of the dimensions of liberal thought. From there on, his purpose was to find the education principle which could accomplish the same function in a school inserted in an industrial, class-structured society.

Without diminishing the role of the intellectuals connected to the party and organically integrated with the working class as the generator of a new cultural model, it is evident that Gramsci relied heavily on the objective capacity of a rationalist school which teaches how to think. This was so clear that his greatest fear was that the participation of the masses in the secondary school might tend to relax the discipline of study, which he considered fundamental if the children of the working class were to be able to compete with the children of intellectual families, better prepared for school work. We know today, however, that the unitary school is far from being a panacea in relation to the class system. We also know that the mechanisms of reproduction through which the *status quo* is maintained are complex and resist fairly successfully the attempts to modify the social structures by starting with changes located in the educational system. The old illuminist ideas which Condorcet developed in his *Sketch of a Historic Tableau of the Progress of the Human Spirit* continue to inspire educational proposals.

There is room, however, for doubt. Is it possible nowadays to keep on taking for granted those immanent relationships between reason and freedom? Wright Mills reviewed the history of confidence in reason as a liberating instrument. In Marxist thought, the revolutionary change would take place when men had access to class consciousness; in Freudian thought, when reason could reveal the individual biography; in liberalism, when reason is spread throughout the society. At the present time, says Wright Mills, "... increased rationality may not be assumed to make for increased freedom". "Great and rational organizations—in brief bureaucracies—have indeed increased, but the substantive reason of the individual at large has not. Caught in the limited milieux of their everyday lives, ordinary men often cannot reason about the great structures—rational and irrational—of which their milieux are subordinate parts".

Rationally organized social mechanisms—such as the State and the great corporations—whose activity is subtracted from the participation of producers and politicians, constitute authoritarian domains. These domains are ordered according to a technocratic rationality—a social non-rationality —which hold the means of 'convincing' of manipulating or of coercing. They attempt to condition people in such a way that they do not make history and "...they tend increasingly to become the utensils of history-makers and also the mere objects of history-making".[6]

It is not our intention to present a fatalistic, 'Orwellian' picture, but instead to emphasize the new contradictions: high instrumental rationality versus lack of freedom and minimum societal rationality; great concentrations of economic and political power versus social groups excluded from decision-making; complexity of institutions and policies manipulated majorities which lack information and alternative proposals; esoteric, 'explanations' about policies presented as if they were founded on an alleged

technical reason which the layman, the idiot in the literal Medieval sense, cannot even attempt to understand; complexity and high specialization of scientific knowledge versus the few years' education received by the majority of the population. We should not omit either the alienations which the technical bodies generate in the common man by convincing him that he cannot by himself solve even the problems intimately connected with his personal existence and that he depends on the array of specialists capable of solving them. Cases in point are the educator who explains to the parents that "they do not know how to educate their children"; the analyst without whose intervention the individual psychic problems are unsolvable, and so on.

Faced with this state of affairs, the role of education as a social condition of the functioning of democracy becomes very complicated. It is not enough to fight for making basic education universal, or to ask for more democratic access, or to regard education as a neutral milieu in which personality develops at the margins of power, class and ideology contradictions in society. External conditions are key prerequisites of the educational process but the substance of the knowledge which is transmitted, the way in which the reasoning ability is developed and the authoritarian or democratic nature of the pedagogical relationship increasingly become the sensitive mechanisms through which both conformism and freedom to participate in a substantially democrative society are processed.

I

The foregoing reflections have a universal character. They are intended as a reference frame for the specific historical evolution of education in Latin America and will allow us to focus on the relationship of some fundamental traits of the present educational system to the contemporary social structures of the region.

(1) The formation of many Latin American societies was based on the exploitation—discrimination of the native population; or of the Africans introduced as slaves into countries which, like Brazil, maintained slavery until almost the last years of the nineteenth century.

If violence was the typical social form of domination, cultural discrimination was the marginating mechanism of the indigenous sectors. More than four centuries after the Conquest, vast communities still remain with their culture split between "a time of the ancestors (which) represented order and measure" and a "present time (which) can only be a *mad time*".[7] The Iberians and their descendants, on monopolizing the dominant language and denying social value to the dominated language, put into effect an important mechanism for controlling mediation, were conscious that any integrating channel would be able to create a type of acculturation which would not only develop contents for a new identity, but also a capacity for resistance. In this connection, a Royal Order warned that "...the establishment of schools in the towns may bring pernicious consequences and the Indians should only be instructed in Christian doctrine, since any other

teaching is very dangerous, inasmuch as ever since the Conquest it would appear that there has been no revolution by these natives which did not proceed from someone with more instruction".[8]

At the present time, in Andean and Central American countries, teachers impart the first lessons to indigenous children who attend school with the help of an older child who is used as a translator...It is not surprising, therefore, that the indigenous population, whose size is not by any means negligible, continues to be marginated in Latin America.

(2) In most of the countries of the region throughout the independent political life and up to the first post-war years, the dominant classes chose to keep the masses excluded from education, particularly in rural areas. The coercive mechanisms of power imposed an authority which was maintained through internationlization of submissive behavior, a result of highly personalized dependency relationships.

The history of the spread of literacy was very different in European countries and in nations originating in British colonies which have in common with the former the fact that they began the democratic experience at an early stage and have a record of greater institutional continuity".[9] There, literacy goes back to the Reformation which maintained that "...the men of God should be instructed because they have to learn the Word of God on the printed page", a methodology used by the Counter-Reformation in societies where there were religious conflicts.[10] Thus, between the sixteenth and the nineteenth centuries the ability to read and write spread in Europe, first in the urban centers and later on in rural areas, prior to any State intervention and before the qualification requirements arising from the industrialization process needs. For example, at the end of the eighteenth century in the North and North-Eastern region of France, close to 75% of the men signed their marriage lines; in Paris in 1847/48, 87% of the working men and 79% of the women workers knew how to read; in Germany in 1887 only 0.7% of the army recruits were illiterate; in 1900 in Belgium, 83% of the population between 8 and 15 years of age were literate. In England and Wales in 1901 only 1·4% of the men and 1·9% of the women did not know how to sign the marriage lines; in 1907 in Sweden, the number of illiterate conscripts did not exceed 0·3%. The scant data available show the opposite situation in Latin America. In Argentina illiteracy of the population over 14 years of age was 53·5% in 1895; Chile in the same year, it reached 68%; in Cuba, 43% of the population over 10 years of age; finally in Brazil, while it reached 41% in the Rio de Janeiro district, illiteracy was around 80% for the whole of the country in the second decade of the twentieth century.

In 1950, with the exception of Argentina, Costa Rica, Cuba, Chile and Uruguay, the illiteracy rate for the population over 15 years of age exceeded 30% in all the countries of Latin America, with percentages of 50% in Brazil and even higher in Central America.

In 1970 the five "privileged" countries had rates less than 10% while Colombia, Panama and Paraguay had less than 20%. The remaining countries maintained very much higher illiteracy rates (particularly intense in the case

of the age group 15-19) which in Brazil reached 24 %, and similar percentages were recorded in Central America. Although the rates were lower in other countries, still one out of every ten adolescents was illiterate in the region".[11]

(3) Latin America shows the curious experience of 150 years of democratic attempts in illiterate societies. This contradiction was pointed out more than a hundred years ago by the great school reformers. Jose Pedro Varela said: "...the discrepancy which exists between the ignorance of the popular masses and the political institutions which apparently rule us is the efficient cause of the constant political crisis in which we live". He thus explained the persistence of the 'spirit of autocratic government' inherited from Colonial times.[12]

The countries which at an early stage began a policy of popular education followed a national integration project which proposed to lay the bases for a participatory political system. The same objective explains the recent educational processes in societies such as Peru or Venezuela.

While in Europe literacy preceded State educational action which completed the process, in Latin America it was the other way round. In Europe educational progress was parallel to the urbanization process, the market economy, the change from a rural condition to industrialization and the cycle of bourgeoise and proletarian revolutions. In the Latin American countries which initiated the process it was, on the contrary, an *intentional* project of change. Moreover, since the masses in Europe knew how to read and were able to have access to the various ideological messages, institutional action was essential for controlling socialization in the values of the dominant class. But in Latin America the means for controlling ideological influence and social mobilization was illiteracy. Finally, since the educated portion of the society was so limited in Latin America, the weak State initiatives were immediately monopolized by the upper and middle social groups, strengthening the links between education and privileged status.

In fact, the beginning of large-scale primary education occurred in Latin America after the crisis of the oligarchic regimes and specifically with the populist governments that arose in the stage of import substitution industrial expansion and out of the impact of the first urbanization. But while populism organized a better distribution of goods and attempted to reduce the existing cultural gap, it established at the same time a mediated political participation. In Argentina, as Gino Germani pointed out, the "political integration of the masses was begun under the sign of totalitarianism which was able to provide, in its own peculiar way, a certain experience of political and social participation in the immediate, personal aspects of the worker's life, while eliminating at the same time the political organization and basic rights which constitute the irreplaceable pillars of all geneuine democracy".[13] Thus there was all over Latin America a contradiction between charismatic patterns, extreme dependency and heavily anti-rational, liberticide messages and the expansion of educational opportunities for the masses. In some cases, the interplay of forces in the populist alliance led to entrusting the management

of education to the social groups which had most stubbornly opposed the values of reason and freedom.

(4) Industrialization in itself was not an efficient cause of mass education. During the first stage, linked to populism, when large numbers of workers were required, the need for skilled labor gave an incentive to primary education and training programs. The production of mass consumption goods required agrarian reform, which in the end did not take place. Instead, smallholding patterns persisted and agrarian capitalism was developed. In both cases the school was not an efficient means for training a notorious surplus of manpower. As a consequence, the rural school vegetated until the time when the rural-urban migratory flow imposed a demand for literacy and minimum education for urban integration. It is important to note that the history of rural education was different in those societies or regions where the economy of exportable production was based on medium owners showing a clear relationship between family and enterprise and with limited availabilities of manpower for raising the value of the land. In these cases, educational progress was considerable and parallel to participation in the power alliances of these social groups.[14]

In the second stage, restrictive industrialization, with its characteristics of advanced technology and greater capital endowment, was no longer a growing employment market. Open unemployment, under-employment and the minimum income of the poorer half of the population were the central features of a development model based on concentration-margination, which requires a very centralized power system capable of controlling social demands in a compulsory way. Nevertheless, the non-manual sectors in occupations which may formally be considered as having medium status, continued to grow. The modernization cycle, the requirements of a wider market for durable consumption goods and the need for legitimizing power, are some of the factors which explain this expansion.

The expansion of the tertiary activities—the 'spurious' source which gave rise to them is not considered here—required a medium and higher educational formation which, as from 1960, acquired a rhythm of considerable growth, to a point such that in many countries of Latin America the gross rates of education at these levels exceeded those existing in European countries. However, it is not the demand coming from the production structure which generates that growth. The increments of the educational profile of occupations in the lower tertiary sector and in the secondary sector, should call attention to a phenomenon of over-education which cannot be absorbed satisfactorily by the occupations that theoretically would require an advanced educational qualification.[15]

The growth of the medium and higher educational level goes on to be determined by the rigidity of the economic structure which, although it allows the educational system to appear as the only possible channel of raising social status, introduces a mobile balance between education and employment so that each increase in the first is accompanied by requirements of greater educational qualifications on the part of employers. In this way,

the educational system, both as regards the social system as a whole and the different social strata, functions in accordance with a "running ahead" mechanism. So the system is legitimized by the expansion of the educational supply but when a lower group has access to primary education, the upper group is displaced towards secondary education and the next towards higher education. At the same time, continually higher formal educational levels are demanded in the labor market for the performance of the same jobs, with the consequence that while average school attendance has risen, the stratification is reproduced, maintaining the distance between the groups.

With regard to the democratic process, the educational expansion in recent years shows a series of singular characteristics:

(a) High growth rates—located mostly at the secondary and university levels—are parallel to the persistence of illiteracy and incomplete primary schooling of large masses of the population.
(b) Educational expansion does not respond to the requirements of the economic system. It points, rather, to the effort of the middle classes to overcome the existing structural barriers, in particular the contraction of the labor market.
(c) Given the nature of the industrialization process which is dominated by the transnational corporations, on the one hand, and by low-level technology activities on the other, sufficient requirements of scientific training that act as external stimuli of academic development do not exist.
(d) Nor was the educational expansion the result of a planned policy for cultural, democratic development but rather, as mentioned in (b) above, it was a reply to the social demands of the groups in a position to exert pressure on the power structure.
(e) The expansion of the higher levels of education—in which by definition political formation is obtained—has been parallel to the emergence of regimes which are limitative or regressive as regards social participation.

II

In the present transition stage of Latin America, the societies of the region are experiencing a high degree of contradiction and antagonism. The confrontation over the development model and the patterns of income distribution have been the cause of important conflicts in which power, in many cases of a heavily repressive nature, has been faced with significant social mobilization. In these societies an educational system with high rates of coverage and growth, especially in its upper levels, has been developed in response to the demands of certain social groups. This system stands in contradiction to the immediate requirements of the economic system and to the non-participatory, functional assumptions which would correspond to the development model.

What is the relationship between these phenomena and the constitution of a substantial, non-formal democracy?

An attempt will be made in the following pages to answer this question, linking the first inquiries about reason and freedom to the considerations put forward about the peculiarity of the educational process which characterized Latin America. The attempt will be limited to presenting problems and contradictions out of which some that the author considers especially relevant will be chosen for a more detailed treatment.

(1) *Access of the masses to traditionally selective education levels:* In the last three decades a considerable part of the population passed from illiteracy to the ability to understand a written language. While some took the first steps in a reasoning method in the primary school, large contingents of young people had access to secondary education, whose function was in theory that of cultural preparation. Finally, a very appreciable sector was enrolled in higher level education.

During the sixties, countries like Peru, Ecuador and Mexico reduced the illiteracy rate among young people in the 15-19 years age group from 26%, 21% and 25% respectively to 11%, 12% and 15%. In Argentina, Chile, Costa Rica and Uruguay, with percentages in some cases less than 4%, illiteracy became a residual phenomenon.

Primary education increased its coverage rates. Between 1970 and 1975 marked improvements began to take place in the output figures, although they are still far from being minimally satisfactory.

Gross coverage of secondary education shows important figures. Two out of every three persons between 13 and 19 enrolled in Uruguay; one out of every two in Argentina and Panama; one plus a fraction out of every three in Chile, Costa Rica, Peru, Venezuela and Mexico; one out of five in Ecuador, the Dominican Republic, Colombia, Brazil, etc.

The figures for higher education are no less surprising. Around 1975, enrolment as regards the 20-24 age groups of the population shows that there is approximately one student for every 4 young persons in Argentina; one for every five in Peru, Venezuela, Costa Rica and Panama (in descending order of coverage); one for every six in Chile and Uruguay; one for every ten in Brazil and Mexico and in the remaining countries slightly lower ratios.

Without embarking on an analysis of the quality and orientation of education, the mere quantitative fact has an enormous importance. The educational system is acting on part of the new generation whose demands in relation to the political system may become qualitatively different. It can at least be assumed that certain forms of manipulation proper to societies in the early stages of urban transition and having masses with a very low level of education—features which characterized many political processes of the immediate post-war years—are not applicable any more.

(2) *Polarized educational system without an integrating basis:* A brief outline of the region as a whole reveals that approximately one-third of the

younger generation remains illiterate or receives only incipient schooling. Another third is receiving basic schooling and the final third receives prolonged secondary and higher education.

Just as in employment studies an informal sector as opposed to the market sector was defined, so in education there is a similar marginalization. Important sectors of the society are excluded from the possibility of acquiring the minimum cultural formation necessary for becoming social actors. Cultural exclusion assumes greater significance when remembering, on the one hand, the growing social differentiation and the very limited value of literacy in a complex society and, on the other, the double exclusion which results if cultural deficiencies are compared with the levels reached by those sectors whose access to education is facilitated by their high socio-economic position. In this way, education reproduces the concentration-marginality development model, consolidating it throughout the life of a generation. The reproductive functions of education and their connections with the social class system acquire a very considerable significance because they go beyond what a capitalist class system as such would require. They show instead the persistence of the oligarchic model of exclusion and social control by means of the forced isolation of certain groups. Thus exclusion spoils the democratizing impact which the educational expansion of the medium and higher levels could have. That expansion is based, at any rate, on an initial educational adscription.

A policy aimed at achieving a minimum continuity between the different social classes should reverse the tendency which characterizes the development of education, covering the group prior to basic schooling and not to the subsequent one. This would allow effective democratization of access to basic education for the lowest social groups of the population. The lack of interest in pre-school attention clearly shows that the alleged democratization of social systems through education is only a spurious objective.

(3) *Cultural polarization and common political code :* The cultural distances existing between the rural and urban populations, as well as those between the urban semi-illiterates and the same generation with university studies, acquire an extraordinary dimension in Latin America : in the first place, because of the significance of the distance which, apart from not corresponding to two points on the same scale, refers to tangential cultural universes with codes of expression and thinking that have no mutual translation; further, because cultural positions do not share the informal culture which the historical process referred to earlier created in Europe for the whole of society; finally, because these distances are integrated with divergent stratification dimensions—race, language and group history—in some countries of Latin America.

The implications of the phenomenon in political communication are evident when considering how few organizations are able to combine workers

and peasantry with middle-class intellectual sectors, how repetitive are certain populist processes which expressly exclude and establish opposition to intellectual sectors and, finally, the tendency of political behaviors oriented towards social democracy and socialism to have very high correlation with education and a relatively low one with class situation.

Furthermore, it should be asked to what degree this blocked communication between the educated younger generation and its uneducated peers has influenced the tendency towards forms of direct action aiming at upsetting power systems violently instead of being dedicated to the political formation of the masses, whose main assumption is confidence in the capacity for communication between both sectors.

Finally, the means that power uses to establish authority differ according to the polarization. Methods based on traditional authoritarianism, on the handling of charismatic images and on client-oriented devices are frequent in relation to the lower groups. On the contrary, the educated groups demand rationality, some type of political project and a connection between the project and their individual situations. In summary, it would appear that the indispensable basis for a common political language does not exist.

(4) *Segmentation of the educational system:* Educational expansion without the parallel modification of the employment structure and the opening of recruitment channels of elites, have produced clashes between the meritocratic social selection function of education, the social origin of the students and the stratification of society. If the avenues of mobility theoretically offered by education are better than those admitted by the class and power system, two non-excluding alternatives are established : one, that the employment market, adopting criteria which are not those of mere educational degrees goes on to assume classifier functions in relation to entry into positions of unequal rank; second, that the education system is segmented in accordance with two criteria which are not necessarily overlapping —social class and knowledge—so as to link up through educational strata the positions which have status from the beginning and the equally hierarchical positions which exist in the social structure. In those societies whose recent, massive urbanization has altered recognition of the positions ascribed to class condition on the one hand and, on the other, the function of the family as transmitter of class consciousness, the educational system has increasingly been assuming this role.

More sophisticated forms which involve the public as well as the private sector and establish, from pre-school to university, compartmentalized socializations, have been added to the traditional rift between official and private education. In these forms, inequality in socio-cultural origin is amplified to such a degree that the result is glaring disparity between the scopes of cultural and ideological development.

The democratic objectives of egalitarian socialization and comparable education and the symbols of this neutrality (the white overall used as

school uniform, for example), the teaching profession conceived as a modern bureaucracy and recruited from people having similar formation and in accordance with universalist criteria, with rotation of positions throughout the career, are being substituted by the opposition between real educational centers and "day nurseries" for children and adolescents, between a scientifically-endowed, elite university and a university for the masses with low academic standing, a kind of refuge for a prolonged, frustrated adolescence.

(5) *Education of the masses without an explanation of the present and its collective actors :* The expansion of education took place offering basically the same education model of the elites to the masses though without its quality and its abundant cultural information.

The socialization of the elite through the educational system rested on several notions : (a) that the elite inherited a history of domination, so that the history taught to them was the product of privileged actors; (b) that there was no need to explain either the socio-economic structures or power because both dimensions were proper to the dominating position of their families; (c) that the present was the result of a historical process dating back to the colonial era, in which only the upper class had played a role; the masses were regarded as a resistance or a brake to the project of the elite, which was obviously accompanied by racist ideas in countries with indigenous population or in multiracially integrated countries.

On examining the textbooks of Latin American history, it is found that the educational discourse has changed very little. The dominated peoples exist only in relation to the poetic level of their originating cultures but without any influence on the present; the collective actors—the worker, the peasant, the employee, etc.—are not introduced as creators of history but as utensils. Historical narration is often interrupted towards the middle of the nineteenth century or it continues with a procession of presidents and outstanding personalities.

The absence of an analysis of present-day social structures follows from the non-existence of economic and sociological contents in secondary education, or from the pseudo-theoretical formalism. The most explicit result is that the students in the secondary school, as well as those who reach the University, are profoundly ignorant of the most essential aspects of the society in which they live.

The lack of formation is part of a conditioning which will make subordination plausible, leaving the generations unprotected and unable to establish connections between their own lives and the social structure. Nevertheless, it paradoxically creates a vacuum which is filled by concepts and ideologies that do not always coincide with the internalization and subordination purposes of the power elite.

(6) *Knowledge and degrees :* Educational expansion was accompanied by a profound deterioration of academic quality in the overall system of education.

In view of the low cultural level of the newly-incorporated primary and secondary sectors, it was found that: (a) apprenticeship in reading, writing and arithmetic techniques was not accomplished in the time theoretically assigned in the general programs; (b) in secondary education, the incorporation of scientific subjects required experimental methods and equipment which were not available due to lack of human and material resources; (c) the role of language, as linked with the explanation and interpretation of culture, was difficult to maintain. In this sense, teachers and students used a language poor in vocabulary and concepts. Moreover, they used the most direct sentences and the simple tenses (past, present and future) without incorporating the expressive richness of the conditional and the subjunctive. On excluding these sophistications of the Spanish language, teachers limited the capacity of the students for organizing their thoughts.[16] All these problems were solved by taking the line of least resistance: automatic promotion in primary school and repetition by heart in secondary school.

On looking through the projects of secondary education reform in recent years in Latin America, one is surprised, on the one hand, by the lack of debate over the way to establish a cultural principle which would integrate education linking science and the humanities; and on the other, by the non-existence of a systematic program of texts and teacher training, leading to the incorporation of the experimental method into education with its components of observation, hypothesis, judgment and reasoning.[17]

Nor did systematic efforts exist which would link teacher training with university centers of knowledge. Thus the tendency to ignore the need for research, the massive denationalization of the teacher training institutes and their disorderly expansion, are some of the indicators whereby the purpose of ensuring ideological continuity has predominated instead of the intention of training people in how to develop the students' ability to think.

At the same time, renewal of the pedagogical systems was scant. The problem was to transform an elite education into an education for the masses. The number and social origin of the new students modified the program of a school culture adaptable or similar to the family culture, on the former was based. In the name of a supposed national integration, uniform syllabuses and programs were imposed for the whole country based on the most traditional pattern of elitist education.

Finally, research and experiments were so exiguous that a ritualization of education in fact took place.

In the past elitist education in Latin America did not give a dominant role to scientific, instrumental knowledge. What was important was to instill into the group a political capacity and a set of behaviors which would distinguish it as superior and would provide it with ways of thinking and acting which would be useful in the development of aptitudes required for ruling and decision-making. When the masses were incorporated into education, it was required for the sake of social mobility that their formation

should include effective knowledge, especially of a scientific and instrumental kind. In the last instance, of all the dimensions of power to be achieved, knowledge is the only one theoretically obtainable by individual effort. However, due to the dynamics of the quantitative expansion of enrolment, to the lack of consolidated academic structures and to the interest of the power groups in neutralizing the effects of educational democratization, the process was accompanied by a considerable reduction in the knowledge that was transmitted.

With the exception of those countries where a long cycle of educational development maintained an academic tradition, the new clientele in the others pressed for easy ways to obtain the certificates having face value in the employment market. And their educators accepted this, since it was compatible with their limited background.

It is interesting to point out that the coverage of the educational system exceeded the requirements of human resources posed by the economic system. As the majority of the educated persons could only be employed in the State apparatus or in educational extension services, knowledge was not a demand established on the basis of the production apparatus needs. Thus mass education took on the characteristics of a fulfilled prophecy. The top power groups never considered it advisable and it was only accepted as a way of controlling social tensions. The State did not engage, either, in policies designed in such a way that the educational system would provide a solid mass of knowledge. Finally, in the name of an alleged democratization and as a means of political mobilization, youthful groups pressed for the "simplification" of university studies (which in fact meant making them more superficial), emptying them of their educational content. This was a proposal which easily penetrated the student mass which, disoriented by an occupational and social structure that did not offer them employment opportunities, adopted skeptical attitudes about the usefulness of knowledge. Professional diplomas ceased to have universal validity and both business and the State began to qualify them in certain cases, according to university of demanding post-graduate degrees, which in general are considered as indicators of proficiency, or at least of interest in knowledge. In extreme cases, all national education was depreciated and degrees obtained abroad were demanded.

It is not necessary to insist that these mechanisms ensured a class-based, social selection, partially annulling the democratizing effect of educational expansion.

The central subject around which revolves the problem of the quality of knowledge in mass education in Latin America is, on the one hand, the low level of the production apparatus requirements and, on the other, its potential danger for the prevailing power system.[19] Not only the non-elite part of the educational system seems to begin to be marginated from production and power but also the price of this margination appears to be the draining away of academic content.

(7) *Pedagogical authoritarianism and political conformism :* The classic pedagogical relationship is, by definition, asymmetric : one of the actors transmits knowledge and the other learns it. The relationship takes on a singular shape when one realizes that to acquire knowledge implies—as Gramsci said—greater effort and discipline than apprenticeship in manual work. It also requires the dedication of the educator so that the pupil is led to make the effort when he lacks an internalized orientation towards learning. On the basis of this pedagogical relationship authoritarian elements have been added to and integrated with it. It is impossible to set out here the different sources of pedagogical authoritarianism. Let us recall some of them : the persistence of a pedagogical tradition which originated in authoritarian societies ; the social or intellectual weakness of the educator, who attempts to protect himself by means of authoritarian bahavior ; the authoritarianism prevailing in the home and its projection into the classroom ; the pre-conditioning of the child and the adolescent for the passive, conformist attitude he must assume later as a worker in the industrial factory and, finally an aspect not to be overlooked : the teachers who, as a group, represent the moral authority of the *Society*.

A community, an organization of knowledge officiators, expresses itself through the educational process. Its action provokes a subtle blend of power, belief and solidarity which, while enjoying a tacit authority recognized by all, has no need to recurr to authoritarian forms by it does so up to sadistic levels when the power of the officiators is questioned.[20] Moreover, the integrative tendencies implicit in eudcation and the backing supplied by the positivist image of science, lead to a situation in which knowledge can be confused with belief and the transmitter with an officiator. But since this academic milieu is contradictory to the general conditions of urban life, to the lessening of authoritarianism in family life, it characteristics become exacerbated and accentuated by the poverty of content, highlighting the ritual authoritarian aspects corresponding to a dogmatically transmitted knowledge.

On that basis, ideological confrontation in Latin America led the elites in power to aim at achieving political conformism by means of educational socialization. For this purpose, contents related to the present situation were eliminated from the syllabuses, non-conforming professors were excluded and the mechanisms of active, participatory education were eliminated. In addition, an *absolute truth* was proclaimed, which had to be taught as a principle of education.

As the official word is more explicit than our comment, the text by a director of basic and secondary education in a Latin American country is quoted below :

> "...the majority was imbued with the sap of materialist thinking which the 'Roussonian' (sic) philosophy of nineteenth century France spilled over the world and the outpouring of their voices...inebriated the country's cultural and political precincts with a frenzied liberalism that buried

the humanist ideas of the Hispanic inheritance. And its consequent disciples formed legions of citizens incredulous of the Natural Order of Christian thought, defenseless against the tides of Marxism which would reach our shores a few years later."

And he added :

"Those teachers were no more than the representatives of the liberal school in which they had been formed as university students and, as such, sincere defenders of a secularization which is aberrant because of its complicity with masonic-inspired atheism, and that turned them into the naive supporters of 'all ideas are respectable', a stupid motto which gave cover to the Marxist streams which by that time had already begun to penetrate."

(8) *The relative autonomy of the educational process :* The teaching nowadays provided is a typical sign of the quality of the services, since its expansion is carried out without any increase in productivity. The larger the number of students, the larger the number of teachers.

In Argentina in 1975 the teachers numbered 442,000 ; in 1970 in Brazil 1,200,000 ; in Venezuela in 1975 the figure was 146,000 and in a similar manner in the different countries. In the first-mentioned country, the teachers represented a volume equivalent to one-third of the active rural population and a quarter of the economically active population in industry.

It has proven to be very difficult to carry out a monolithic ideological control over this professional sector, even in those countries which designed the purging of the teaching ranks applying the most rational, sophisticated methodology.

The educational system, beyond the programs, service instructions and disciplinary controls, comprise innumerable *educative acts* which are produced individually and spontaneously in the classrooms and which result from the interaction between teachers and students in a process which is not predetermined and which brings as a consequence confrontation of ideas and creative freedom. Thus the academic practices based on freedom to criticize tend to reappear after some time and the authoritarian project shows its weakness in two crucial aspects : first, because of its lack of an ideology able to give satisfactory replies to social and intellectual demands; secondly, because of the absence of an ample intellectual team which could be the bearer and transmitter of that ideology.

The teaching corps experiences more rigorously than other professional groups the drop in its income and the incongruence between the formation received and the status recognized. Furthermore, a sector of it is the daily witness of the conditions of the poorest social strata. One way of reacting is to become mentally identified with the power elite and the other, more generalized in countries where higher education levels have been massified, is to become a critic of a social system which, among other things, is not capable of using its own human resources.

At the same time, the massification of secondary and higher education provokes a growing crisis in the idea that society offers ways of social mobility through education. In general, its graduates are pushed towards forms of underemployment or towards a occupations where there is no opportunity of applying either personal talent or training.

The dissatisfaction of graduates lays the foundations for a growing intellectualization—understood as the opposite of professionalization, to use Joseph Schumpeter's words[21]—encouraging criticism of society and especially of the cluster of factors which prevent the achievement of a substantial democracy. In these conditions, educational expansion—which in its growing phase is the source of integration and conformism—can turn out to be the basic condition from which to develop the rejection of the social structures corresponding to the present development model and the ideology of the power elite.

The foregoing does not imply regarding the process as one-directional. Manuel Antonio Garreton[22] considers that the orientations towards universalism or towards particularism in the sense of being oriented either by a societal project or by a particularist, social class appropriation, constitute the 'drama' of student behavior. According to whichever prevails, the social change effect promoted by education in the democratic system will be very different.

What is evident is that the dynamics of education is very much greater than in the remaining social dimensions. This dynamics is creating an increasing imbalance between the opportunities for access to culture and those existing in relation to other social 'goods', as well as a similar discrepancy between training for political participation and the concrete opportunities for access to it. It would appear that the reproductive function of education in terms of ideology has a limited scope in view of the social contradictions in which the process of educational expansion takes place.

In spite of the limitations referred to above, it is evident that education achieves a certain diffusion of the scientific mentality which cannot be confined within the frame of conservative rationalism—"If the laws are the necessary relations derived from the nature of things" (as Bonald said) "these relations are necessarily established ; thus man, although free, cannot delay their development." The incongruence between democratic values and social reality is too intense in Latin America. Therefore, with contradictions and limitations, education is contributing more to a critical than to a technocratic rationality.

References

1. John Stuart Mill. *On Library,* Henry Regnery Company, Chicago, 1965, 4th ed., p. 85.
2. Isaiah Berlin, "John Stuart Mill and the Ends of Life (Foreword) in J.S. Mill, *On Liberty,* Oxford University Press, London, 1969.
3. John Stuart Mill, *On Liberty,* Henry Regnery Company, Chicago, 1965, 4th ed. p. 13.

4. Bertrand Russell, *Education and the Social Order*, George Allen & Unwin Ltd., London, 1933, 2nd ed., p. 21 American edition : *Education and the Modern World.*
5. Antonio Gramsci, "En busca del principio educativo', in *Cultura y Literatura*, a translation by Jordi Sole-Tura. Ed. Peninsula, Madrid, 1967, p. 69. The same text is published under the title : "Los intelectuales y la organizacion de la cultura" in *Para la investigacion del principio educativo*, Ed. Nueva Vision, Buenos Aires, 1972.
6. C. Wright Mills, *The Sociological Imagination*, Oxford University Press, New York, 1959, pp. 167 and 181.
7. Nathan Wachte, *La vision des vaincus. Les Indiens du Perou devant la Conquete espagnole* (1530–1570), Ed. Gallimard, 1971.
8. Royal Order to the Viceroy of Peru concerning the College of Indian Chiefs and Nobles of Lima (San Lorenzo, 24 November 1785). Reproduced in *Biblioteca Americana* (Vol. I, London, 1823, p. 367). Quoted from facsimile edition of the Presidency of the Republic of Venezuela published as a tribute to the 6th Congress of the Asociacion de Academias de la Lengua, Caracas, 1972.
9. This does not ignore the group of factors connected with the emergence of democracy analyzed by Barrington Moore in *Social Origins of Dictatorship and Democracy*, Allen Lane. The Penguin Press, London, 1957.
10. "...certains fabricants se plaignaient, en ma presence, de ne pouvoir utiliser comme contremaitres certains ouvriers, au demeurant excellents, mais depourvus de connaissances scolaires, C'etait surtout les cas dans les regions catholiques", K. Marx, F. Engels, *Critique de l'education et de l'enseignement*, compiled and translated by R. Dangeville, Francois Maspero, Paris, 1976, p. 70.
11. Data from : Francois Furet and Jacques Ozouf, *Lire et ecrire: l'alphabetisation des francais de Calvin a Jules Ferry*. Les Editions de Minuit, Paris, 1977; Carlos Cipolla, *Educacion y desarrollo en Occidente*, Ariel, Barcelona, 1970; *Anuario Estadistico de la Republica Oriental del Uruguay, Censo General de la Republica en* 1908. Montevideo, 1911; Gino Germani, *Estructura social de la Argentina*. Ed. Raigal, Buenos Aires, 1955; Jorge Nagle, *Educacao e sociedade na Primeira Republica*. Ed. La Universidade de Sao Paulo, 1974; German W. Rama, "Educacion media y estructura social en America Latina", in *Revista Latinoamericana de Ciencias Sociales*, N°3, Santiago, 1972; Proyecto Desarrollo y Educacion en America Latina y el Caribe, *Informe para la Evaluacion Internacional del Desarrollo*. Buenos Aires, 1978.
12. Jose Pedro Varela, *La legislacion escolar*, Montevideo, 1876. Transcribed in accordance with the Biblioteca Artigas' edition, Montevideo, 1964, pp. 108/9.
13. Gino Germani, *Politica y sociedad en una epoca de transicion*, Chapter 9, "La integracion de las masas a la vida politica y el totalitarismo", Ed. Paidos, Buenos Aires, 1962, p. 252.
14. Jose Fernando Garcia, *Educacion y desarrollo en Costa Rica*, DEALC/2; Rodrigo Parra Sandoval, *La edicacion rural en la zona cafetera colombiana*, DEALC/15; both published by UNESCO/CEPAL/PNUD, Proyecto Desarrollo y Educacion en America Latina y el Caribe, Buenos Aires, 1977 and 1978, respectively.
15. Carlos Filgueira, *Expansion educacional y estratificacion social en America Latina* (1960–1970). DEALC/4. UNESCO/CEPAL/PNUD. Proyecto Desarrollo y Educacion en America Latina y el Caribe, Buenos Aires, September 1977.
16. See Basil Bernstein : "Social class and linguistic development : A theory of social learning", in A.H. Halsey, Jean Floud and C. Arnold Anderson, *Education, Economy and Society*. The Free Press, New York, 1965.
17. See Rodrigo Vera Godoy : *Disyuntivas de la educacion media en America Latina*, UNESCO-CEPAL-PNUD, proyecto "Desarrollo y Educacion en America Latina y el Caribe", DEALC/91, Buenos Aires, 1979.
18. Rodrigo Parra Sandoval : "La universidad colombiana : de la filosofia a la tecnocracia estratificada". Paper presented to CLACSO Seminar : "Situation actual de las universidades en America Latina", Bogota, 26–29 September, 1978.

19. Jorge Graciarena : "Esbozo de una interpretacion de la crisis actual de la universidad latinoamericana". Paper presented to CLACSO Seminar : "Situacion actual de las universidades en America Latina", Bogota, 26-29 September 1978.
20. In this connection, see Sheldon S. Walin's views on society in *Politics and vision.* Continuity and Innovation in Western political thought, Little, Brown and Co Inc., 1960.
21. Joseph Schumpeter, *Capitalism, socialism and democracy,* chapter 13, George Allen & Unwin Ltd., Londres.
22. Manuel Antonio Garreton, "Universidad y politica. Los procesos de transformacion y reversion universitaria en Chile. 1967–1977". Paper presented to CLACSO Seminar "Situacion actual de las universidades en America Latina", Bogota, 26–29 September 1978.

JOHSARD

Research in Mountain Ecology & Hill Development Resource Management

THE INSTITUTE OF HIMALAYAN STUDIES & REGIONAL DEVELOPMENT. (Garhwal University) Srinagar, Garhwal, publishes high content research in Mountain Ecology & Problems of Hill Area Development through its organ **JOHSARD** (Journal of Himalayan Studies and Regional Development) that comes out annually. Papers are commissioned on specific Eco-problems to establish findings for sound ecological development process.

Printed on fine art paper (Size : $7\frac{1}{2}'' + 10\frac{1}{2}''$) **JOHSARD** exposes problems in Himalayan Ecology. Systematics, Environment Conservation and Development planning holistically by contributions from eminent resource persons and practising authorities of India and overseas.

Subscribe

Become a regular subscriber of JOURNAL OF HIMALAYAN STUDIES & REGIONAL DEVELOPMENT. Bankdrafts payable to Editor "JOHSARD". Add bank clearance with Cheques. Address to:

RATES :

Inland : Rs. 25 (Annual)
Overseas: $9 (Annual)
(Apply for airmail)

Director,
Institute of Himalayan Studies,
P.B. No. 12
SRINAGAR (GARHWAL), INDIA
Pin Code : 246 174

GANDHI MARG

A monthly journal of the Gandhi Peace Foundation which seeks to probe Gandhian perspectives on the various current national and international problems and to promote normative approaches to their analyses through free discussion by eminent thinkers and activists in diverse fields of human endeavour all over the world.

Send your subscription today by bank draft, postal or money order to:

The Circulation Manager
GANDHI MARG
Gandhi Peace Foundation
221/223 Deen Dayal Upadhyaya Marg
New Delhi-110 002

Rates	*Single copy*	1 *Year*	2 *Year*	3 *Year*
India and South Asia	Rs. 4·00	Rs. 40·00	Rs. 70·00	Rs. 90·00
USA, UK and Elsewhere	$ 2·00	$ 20·00	$ 35·00	$ 50·00

(For airmail add $ 15·00 extra per year)

Journal of Higher Education
Vol. 9 No. 1 Monsoon 1983

Indian Education: The Anti-Cultural Involution*

DINESH MOHAN

"Teaching the Unteachable"—"Education for Sale"—"New Bureaucracies Taking Birth"—"Delinking Education from Employment": these are titles of articles recently written, grappling with the problems of higher education in India[1]. Rarely does one see a spate of such articles on primary education or adult education. A curious phenomenon, considering that even official statistics do not put adult literacy rates above 36% and enrolment of students in middle schools over 37%.[2]

This is significant because functional literacy must then be well below 30% in India. Even among poor countries India ranks among the lowest in functional literacy and primary education, though there is no excuse for this. Our mental preoccupation remains with the problems of universities. and that of the government with "law and order" in these institutions. The problem of functional literacy is relegated to providing funds and "teachers". However, the two issues cannot be separated, and what we do with higher education will have a direct bearing on primary and secondary education. It is my contention that the expansion of higher education (or even secondary education) without accompanying political changes can actually result in an anti-academic climate and a strengthening of reactionary forces. Here I will attempt to demonstrate that our preoccupation with higher education results from an unnatural expansion of higher education facilities far beyond what our polity can tolerate or accommodate and that most discusion remains at a superficial level.

The Problem

The articles mentioned above concentrate mainly on the lack of student motivation, the undue importance of examinations, the corruption of teachers

*Patriot-Link Anniversary Celebrations, National Seminar on India towards the 1990s (26-28 March, 1983), New Delhi.

and students, the existence of question banks, the low salaries of teachers, learning by rote, the bureaucratization of education, the linage between jobs and degrees, and the politicization of universities. In a recent lecture, Professor Rais Ahmed (currently Vice-Chairman of the UGC) even ventured to suggest that "instead of benefiting, universities seem to have become a victim of *democracy* and politics". (emphasis added).[3]

The present Chairman of the University Grants Commission, Madhuri Shah, lays a great deal of importance to the law and order problem in most of her speeches. There is an assumption in all this that the problem is not endemic but can be resolved by reforms. Preeti Mehra reports that "several academicians feel that reforms are not the crucial question. Streamlining the present system is[4] V.V. John puts all the blame on the politicians and students: "there is a state of mind that is fostered by our political culture—a mind that is filled with positive hostility to learning.[5] "But none of these analyses go for enough. *The fact is that we have effectively closed down many of our Universities though the doors are still open. That is why reforms are almost impossible.*

Our physical situation is not very different from that in China during their cultural revolution. Though the formal decision of the Central Committee of the CCP concerning the Great Proletarian Revolution was to end the "bourgeois domination over schools", in fact they seemed to have realized the irrelevance of their universities and of their existing structures. The period was used to change admission procedures, examination systems (open book exams given more importance), curricula and teaching materials (many courses were shortened and others terminated. Enrolment in universities in China was heavily curtailed in the late sixties and admissions were increased only in the middle seventies. This have them a chance to make the necessary changes and follow up with the modification of more recent years.

Our ways seem to be more devious. Starting in the sixties we also stopped imparting university education in its old form, but we have neither instituted changes nor increased the quantum of students receiving any *education.* This we have achieved not by policy but by unilateral decisions taken by each individual involved in the education business. Since no reasonable academic exchange takes place in a large number of classrooms across the nation even when colleges are officially open, there would be little academic loss if the university was closed.

The students have realized that most of what they learn in college is not very useful and not really in demand. In addition they find their guide books and text books easier to follow than their teachers. The logical response to such a situation is to not attend classes, demand easier examinations or no examinations, and purchase examination papers. Since they really do not understand what they read, it is more efficient to learn it by rote. Since none of this really could excite a normal human being, boredom is at least alleviated by strikes, poster painting, gossipping, politicking and

eveteasing. All perfectly reasonable, and the only responses possible. Students' union have hardly ever demanded cheaper books, better libraries, longer library hours, easier access to self-instruction correspondence courses or night classes. Higher *learning* is obviously not perceived to be important or necessary.

The teachers on the other hand also realize the irrelevance of what they teach. Most of them do not even understand the material they are expected to teach. Since they cannot explain complex ideas it is natural for them to encourage rote learning, The uselessness of this knowledge is confirmed by their life experience: outside the classroom there is no demand for what they are supposed to be experts in: the community and society never asks them to give help in the areas of involving their expertise and knowledge. Therefore there is no need to keep up with the latest developments in their fields, or to take an interest in students, or to set imaginative examination questions, and there is certainly no need to improve standards. It is better to avoid classes and ask for higher salaries and continuous promotions. But the formalities of the job demand "academic" achievements though the situation does not permit most teachers any such luxury. The only way out is to produce pseudo-studies and mock theses. If that fails, the authorities have to be blackmailed to extort material needs.

Teachers' unions have rarely pressed for better classrooms, more teaching aids, journal allowances, more modern curricula, elimination of useless courses and higher standards, or academic freedom. All these are far from their concept of faculty benefits.

The public in general and the employers in particular have internalized the state of affairs and found their own piece-meal solutions. They do not try to improve the higher education set-up by influencing professional societies or investing in universities. Nor do they protest when universities are closed. Citizens forming a committee spontaneously to help solve university problems is rarity. Even elite institutions suffer benign neglect : no industrial house has donated a laboratory to any one of the Indian Institutes of Technology. If the employers really valued higher education they would take greater interest in these institutions and even protect them from deterioration. If the employers really needed graduates from universities, they would get very upset if universities did not function properly. No trade or manufacturers' organisations have protested when a university remains closed for most of the year.

The only people who get worried are the keepers of law and order, the bureaucrats and the parents. Not because education suffers, but because universities being closed formally is a greater law and order problem than universities being open. Mind-killing universities and colleges are a good place to keep the younth occupied. A good diversionary tactic. The young men and women can be kept busy worrying about irreleavnt and incomprehensible material, notes, examinations and cheating. At worst they can deface walls, burn a few buses, and get teargassed. But they generally stay away from agitating about prices, police atrocities, terrible medical

care and civic amenities. By the time they cheat their way through examinations their minds are dulled and their parents ready to get them married. Once married they are safe. After going through a dishonest days work they have no inclination to worry about societal evils nor the energy to do anything about them. Our universities are actually a tremendous help in keeping the lid down. At least for the time being. The government probably recognises this role of "higher education" but is not about to acknowledge it.

In brief, a case is being made here that higher education has expanded far beyond what India needs and can absorb. This is probably one of the important reasons why standards cannot be raised, reforms not implemented and streamlining not possible. In addition, this results in a substantial lowering of standards, perpetuates inequality, promotes anti-intellectualism, and diverts attention from the more important tasks of learning and literacy. In affect we have closed down most of our institutions of higher learning. The rest of the article attempts to substantiate some of these assertions with a brief discussion on possible counter-measures.

Unreasonable Expansion

Among the nations classified as low-income and middle income by the World Bank, India leads in the number of graduates produced every year. We are also reputed to have the third largest stock of scientific and technical personnel in the world. Though almost everyone agrees that the average quality of this stock is dismal[7] no one questions the validity of the above statement. According to a publication of the Department of Science and Technology of the Government of India, at least seven other countries, —Argentina, Italy, Japan, Poland, USA, USSR and Yugoslavia—have more scientists, engineers and technicians than India[8]. I am personally not really concerned whether we are third or tenth, but more interested in what is the role of this manpower and what the trends indicate.

Figure 1 shows the phenomenal rise in higher education in India. In all probability, elementary education statistics are probably less reliable than the university enrolment statistics and therefore the disparities may be worse. Looking at the plan allocation figures it appears that higher education has been given a disproportionate amount of importance in India. It is only in the 6th plan that elementary education has been given a relatively higher allocation. But we must remember that basic education and higher education share a symbiotic relationship: if basic education is bad then students going into higher education would be of poor quality; if higher education is of poor quality, secondary school teachers would be of poor quality. In the extreme situation this would result in a downward spiral in both sectors. In higher education there are many other issues involved: are the finances adequate ? Is there a demand for the products of universities ? Is the education relevant ? Which section of the population

is being served ? Do universities impart needed skills, idealism and motivation ? All these are inter-related questions and none of them independent of the political and economic structure of the nation. I believe that it would be very difficult to resolve any other issue unless the need and demand for higher education is sorted out first. Solutions to other problems would be easier after that.

Figure 1 shows that as enrolment in higher education increased in India so did the number of Indian students in the USA. I do not think that this relationship in entirely fortuitous, though factors such as immigration laws in the USA do influence it. However it does indicate that highly trained persons in India may be in excess and they do not find adequate outlets in India.

Figure 2 shows that though expenditure on education as a percentage of GNP is low in India, enrolment at universities as a percentage of labour force in industrial and labour sectors is very high. Enrolment at the third level (beyond secondary school) as a percentage of population has not been used because I think it is mainly an index of poverty and lack of industrialisation. Since university or professional graduates seek jobs mainly in the industrial or service sector the ratio used in Figure 2(a) may give us a better indication of the relative demand for higher education. In the industrialised countries the expertise level required in the service sector and the skilled to unskilled ratio in the industrial sector is much higher than that in India. The data in Figure 2(a) indicates that third level enrolment may be far too high in India for current socio-economic conditions.

Industrial and service sector employment would have to increase many fold before university graduates in India could find meaningful employment. This is if we follow western models of development. Since we do not have capital and resources to waste, we may need much lower ratios then even the UK.

Another way to look at the same issues is to compare the number of scientific personnel as a ratio of the industrial product instead of the total population. The former ratio may give some idea of current need whereas the latter just indicates the level of poverty. Figure 3 shows these statistics of India, the USA and the UK India produces about ten times as many engineering graduates per billion dollars of manufacturing product as the UK does! Even if the price differentials are taken into account, it is clear that either India produces too many engineers, or that most of the engineers may not be of good quality, or that many of these graduates do not work as engineers. Or all of the above.

The disparities are not as large, but a similar situation seems to be true for the number of scientists and engineers involved in R & D (Figure 3). These statistics could indicate that the country is supporting far too many scientists for the level of manufacturing in the country, or that those listed as R & D personnel are really not involved in R & D.

Conversely, one could even say that since these ratios are so lobsided in India, it is not surprising that these scientists cannot be supported adequately.

What I have demonstrated above has been discussed qualitatively by many. The demand for delinking jobs from degrees actually is an assertion that there are not so many jobs as there are degree holders. But delinking is not the issue. It cannot be done as long as there are colleges which have openings for admission.

The employment exchange data give ample evidence of the overproduction demonstrated above. But no serious thought has been given to the magnitude of this problem, quantitatively or qualitatively. The indices I have used in Figures 2 and 3 clearly show that the higher education sector in India has expended far too rapidly in relation to economic and industrial development. This expansion has had some very deleterious qualitative effects on the educational establishment as a whole. Some of these are discussed below.

Effects of Unreasonable Expansion of Higher Education

Sometime back I interviewed a first class graduate in electronics from G.B. Pant University. I quickly realized that asking him technical questions would not get me anywhere. So I asked him where his hometown got its power from. "The power house sir", he replied with complete confidence!

Such experiences are not uncommon whether the person being interviewed is seeking admission to a post-graduate programme, or a faculty position in a university, or a sales job in a company. They indicate the tremendous lowering of standards that has accompanied this expansion in higher education.

It is not necessary that lowering of standards will always accompany expansion. Not at all. Not if higher education expands in proportion to industrial and agricultural needs and not at the expense of basic education.

In India the expansion of higher education has been of a unilateral nature inspite of the 1964–66 Education Commission's observations in this connection : "There is a general feeling in India that the situation in higher education is unsatisfactory and even alarming in some ways, that the average standards have been falling and that rapid expansion have resulted in lowering quality" ? But the report itself did not deal with this problem of expansion which much seriousness. Actually the Commission envisaged expansion in university enrolments from 10 lakhs in 65–66 to 40 lakhs in 1985–86. And we have expanded almost as fast as the Kothari Commission suggested. It is important to note here that even when the problem of expansion was noticed no measures except streamlining and better facilities for students, faculty and staff were suggested.

The problem is that when there is no real demand for a large number of the university graduates, there is no external check on their quality by the users. This makes the students less discriminating and so there is no check

on the teacher. The teacher in any case is not of the highest standard any way and this lack of demand in turn makes him worse. Under such circumstances the university administrators in turn do not have to worry about quality. Then it really does not matter if faculty selections are not entirely fair. Quality is no longer the issue, personal gains are. One can't expect fair selections when there is no need to select the best.

Once bad faculty is selected then it is very difficult for good ones to get in. Only the good ones leave for the bad have nowhere to go. The good ones leave for another new institution or for greener pastures abroad. Since the average age of teachers in India is low, the universities are then doomed for decades.

In a large country there are bound to be large numbers of bright young people. If they are lucky enough to belong to the higher income groups they can gain entry to a few of the elite institutions and do well with the help of a few good teachers and good textbooks.

But there are very few openings where these excellent graduates can be used productively. Some, especially those in pursuing careers in science and technology chose to go abroad. The remaining are lucky if they don't end up doing work of a routine nature. Their potential is not challenged in areas they have been trained to think as their realm of expertise. This internal brain drain is far more harmful and a greater waste than the external brain drain we always focus on. When bright, trained and educated persons do not use their expertise the society gets an indirect message that specialization and intellectual activity may not be important or necessary. The importance of scholarship is thus devalued in general.

This effect is dramatically demonstrated by the fact that very few outstanding students opt for research careers. For example, hardly any of the Indian Institutes of Technology's own graduates return for post-graduate work. A Ministry of Education's Committee on higher technical education recently noted that "it has not been possible to attract sufficiently large number of bright young people for post-graduate education".[10] But the authors of the report do not attack import of technology in strong enough terms nor do they discuss the rapid expansion of higher education as a possible cause of these problems. Figure 3 clearly indicates that we cannot use such large numbers of highly trained persons as long as we use models operating in the West. They seem to survive with relatively fewer experts for their level of development.

Another serious side effect of this rapid expansion, lowering of standards, and insufficient demand, is the widespread prevalance of fraud and Plagiarism in institutions of higher learning. Most heads of institutions do not even take reported cases seriously. Hardly any faculty members lose their jobs owning to academic dishonesty. Most retort that fraud is common even in America so who are we to get excited ? But the proportions here seem to be frightening. In a private conversation a member of the Medical Council of India estimated that as much as 80% of the M.S. theses may be based on fraudulent data. In another such conversation an eminent scientist and

director of a national laboratory claimed that he does not accept examining Ph.D. theses because the results of 70% are not replicable. These are not matters to be brushed aside. They are devastating for a community and nation that desperately needs to be independent of foreign domination in knowledge and information.

One common argument in favour of rapid expansion of higher education is that this gives a better opportunity to the less affluent for upward mobility. Even this is being challenged. In the absence of accompanying political changes and improved basic education this may have the opposite effect. Richards and Leonor claim that "The promotion of education, which simply means its expansion, may equally well lead to the opposite of the effect intended, i.e. greater inequality in incomes and over all well being"[11]. One of the reasons this can happen is because as the system expands unnaturally only a few institutions maintain standards. These institutions institute admission procedures and a aptitude tests which generally favour these coming from better family backgrounds. In the other institutions, since the teachers and facilities are not good it is the students with deprived backgrounds who suffer more. In a very tight job market and over inflated supply situation, those with poor backgrounds and up where they started after having wasted time and effort in an endeavour that was supposed to help them in upward mobility. A sure recipe for cynicism and corruption.

There are many other effects of this lowering of standards, but I would like to discuss just one more. As the expansion of institutions has taken place the quality of academic work has reduced but the number of higher degrees has increased. As these Masters and Ph.D. Degree holders get jobs in research institutions and universities they all become equal. They forget that most of them did not do much to earn their advanced degrees. Living conditions being difficult all of them demand the same benefits that their best colleagues deserve. Initially some of them manage it by fixing selection committees, and then follow the demands of the unions. Eventually, those groups who have blackmailing power manage to get time-bound promotions and academic evaluation takes a back seat. In the above analysis I have tried to link many of the ills of our educational system to the rapid expansion it has undergone. I am not suggesting that this is the only reason, but only focussing on an aspect that has been neglected too long and little understood. It will not be easy to resolve either but some countermeasures have to be contemplated.

Remedial Measures

We must be clear that as far as national development and relevant research is concerned China and India seem to have fared equally well. At least in spheres we are particularly proud of, like space, nuclear research, agriculture, industrial infrastructure and defence[12]. This is even true for others where we have not been so successful, like health, anthropology, archeology, etc. The West's (therefore—India's) concern with the Chinese

cultural revolution's effect on research and development seems to be rather ill-informed. The past in China is regarded as a "mistake" because the present policies have changed. India's policies are supposed to be on the right track because there have been no major changes. This is hardly logical !

The fact is that though China closed down many of its universities in the 1960s and India increased its enrolment during the same period, the achievements in areas that matter to most of the people seem to be similar. The only conclusions I can draw from this is that university education in large numbers was not relevant to many development goals in China and that many universities have effectively remained "closed" for many years in India.

We must free at least half of the Universities by taking away their burden of having to behave like the old British Universities. They should be charged with responsibilities of teaching only and teachers should not expected to earn Ph.Ds except out of pure personal interest. There should be many more short-term and evening courses and fewer degree courses. Half-hearted and ill-designed measures like UGC's Restructuring of Courses are doomed to failure since they just offer a sop. In this case, colleges were expected to offer "vocation related" courses, which are neither here nor there. It is significant that only 31 colleges and one university were implementing the scheme in 1981[13].

We must try to move away from the populist concept of formal instruction for all to a concept of learning for all. If we accept the latter concept, then many fewer institutions would have to function in the form of the UGC's concept of a university and then institutions could provide central facilities like libraries, laboratories and computer centres to a larger community, along with short-term correspondence and evening classes.

None of these changes would be very beneficial unless they are accompanied by drastic cuts in English Honours courses, B.A. pass courses, the banning of English medium education, a reduction in the import of technology and other administrative measures constantly discussed.[14]

At best, all that English honours courses accomplish is to produce teachers for teaching more English honours students. At worst they are an absolute waste of time, energy and money. English medium instruction itself turns decent human beings into semi-literates in India. They end up knowing very little of the people and culture of their surroundings and imbibe a bowdlerized version of a culture alien to them. It gives the false notion of equating the English language with the quality of education. Learning and teaching in the English language further adds to an exacerbates the class divisions already prevalent and closes doors of opportunity for the less privileged.

I am under no illusion that these changes can be brought about just by a fiat from above. Or that such a policy can actually be formulated. By demonstrating the above relationships it is my intention to show that improvements in primary and secondary education cannot take place unilaterally. Neither can be problems of universities be dealt with unless the

issue of expansion is first understood in all its details. This is crucial matter and we cannot hide behind our pride in large numbers.

Conclusions

The present situation in Indian higher education is analogous to the cultural Revolution period in Chinese education, though only superficially so. The situation is more accurately described as an "anti-cultural-involution": a regression rather than a new start, and highly negative in its impact on self-worth. The majority of our universities are for all practical purposes closed, though their buildings usually remain open.

China could re-open its institutions of higher learning and assign them new and more appropriate rules and duties. India will not be able to "reopen" its institutions for the better unless some of them are closed first. It is my contention that many of our problems in education stem from a rapid expansion of higher education. We have to dispense with the idea of formal instruction for all and invent systems which provide *learning* for all.

The alternative is to keep "closing" more institutions, as in the past, and replacing them with more new institutions. Can we afford this ? No but this is what we are going to get. What are we going to do about it ?

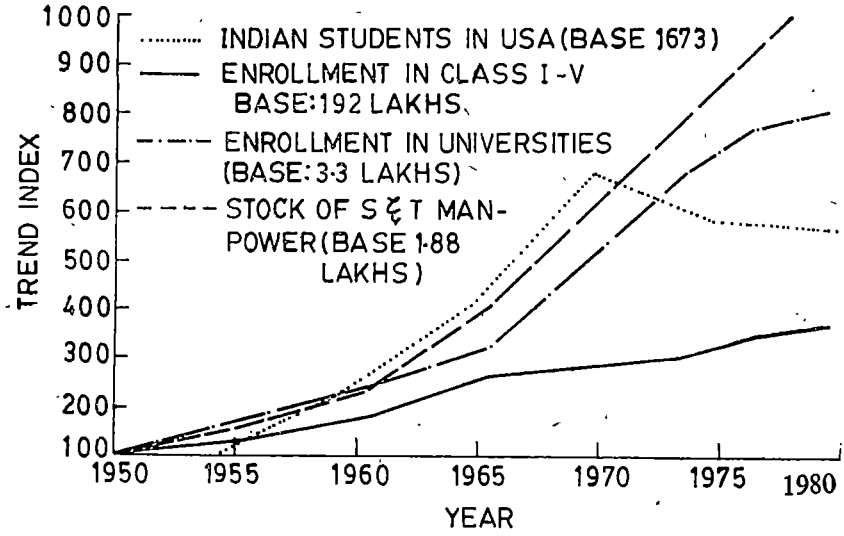
References

1. V.V. John, *Indian Express,* July 7, 1982; Preeti Mehra, *The Times of India,* April 25, 1982; Kaa Naa Subramanyam, *PATRIOT,* March 12, 1983; John Kurien, *Times of India,* March 8, 1983, respectively.
2. All statistics are taken from sources listed at the end of this article.
3. Rais Ahmed : *Universities : Perspectives and Problems.* Indian Institute of Technology, New Delhi, January 27, 1982.
4. Preeti Mehra, *Op cit*
5. V.V. John, *Op cit*
6. Sylvia Chan : "Revolution in Higher Education" in *China : Impact of the Cultural Revolution,* Ed. Bill Brugger, Barnes and Noble, New York, 1978.
7. Dinesh Mohan : "A Sea of Mediocrity", *Seminar,* February, 1981.
8. Research and Development Statistics, 1978–79, Department of Science and Technology, New Delhi. p. 84.
9. *Education and National Development,* Report of the Education Commission 1964–66. NCERT, New Delhi, p. 503.
10. *Report of the Review Committee On Post Graduate Education and Research in Engineering and Technology,* June 1980. Ministry of Education and Culture, New Delhi.
11. P. Richards and M. Leonor : *Education and Income Distribution in Asia,* Croom Helm, Londoff. 1981.
12. See Dinesh Mohan : "Retooling". *Seminar,* January, 1983.
13. *Annual Report* for the Year 1980–81. University Grants Commission, New Delhi. p. 7.
14. See 7 and 12 Above for more detailed discussion on this.

Sources of Data

1. *Research and Development Statistics* 1978–79. Department of Science and Technology, New Delhi.

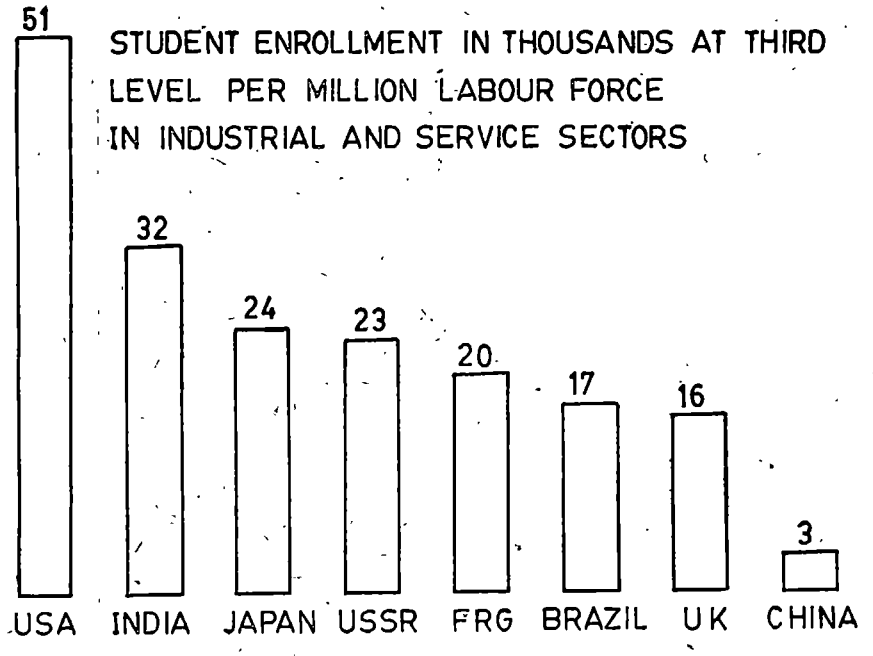
2. *Education in India,* Volume I, 1977–78, Ministry of Education and Culture, New Delhi. 1981.
3. *World Development Report* 198 the World Bank 1981.
4. *Annual Report* for the Year 1980–81, University Grants Commission, New Delhi.
5. *Statistical Digest,* UNESCO. 1981.
6. *Sixth Five Year Plan* 1980–85, Government of India, Planning Commission.
7. *India* 1980, Publications Division, New Delhi.
8. *Digest of Educatinoal Statistics* 1981, U.S. Government Printing Office, Washington, D.C.
9. Open Doors : 1980–81. *Report on International Educational Exchange.* Institute of International Education, U.S.A.
10. *Statistics of Education : Further Education.* Vol. 3, 1977. Her Majesty's Stationery Office, London.



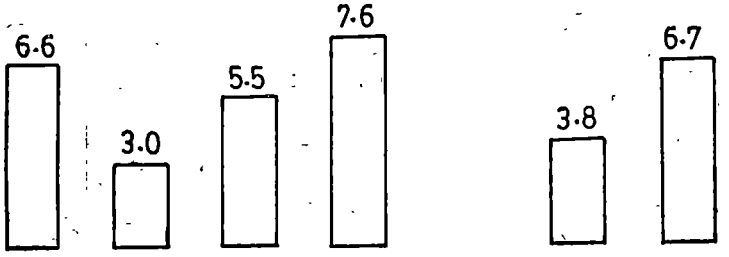
EXPENDITURE ON EDUCATION IN CRORES

	4th PLAN	5th PLAN	6th PLAN
ELEMENTARY	240	410	905
UNIVERSITY	214	450	762

FIGURE 1 TRENDS IN EDUCATION IN INDIA



STUDENT ENROLLMENT IN THOUSANDS AT THIRD LEVEL PER MILLION LABOUR FORCE IN INDUSTRIAL AND SERVICE SECTORS



TOTAL PUBLIC EXPENDITURE ON EDUCATION AS A PERCENTAGE OF GNP

FIGURE 2

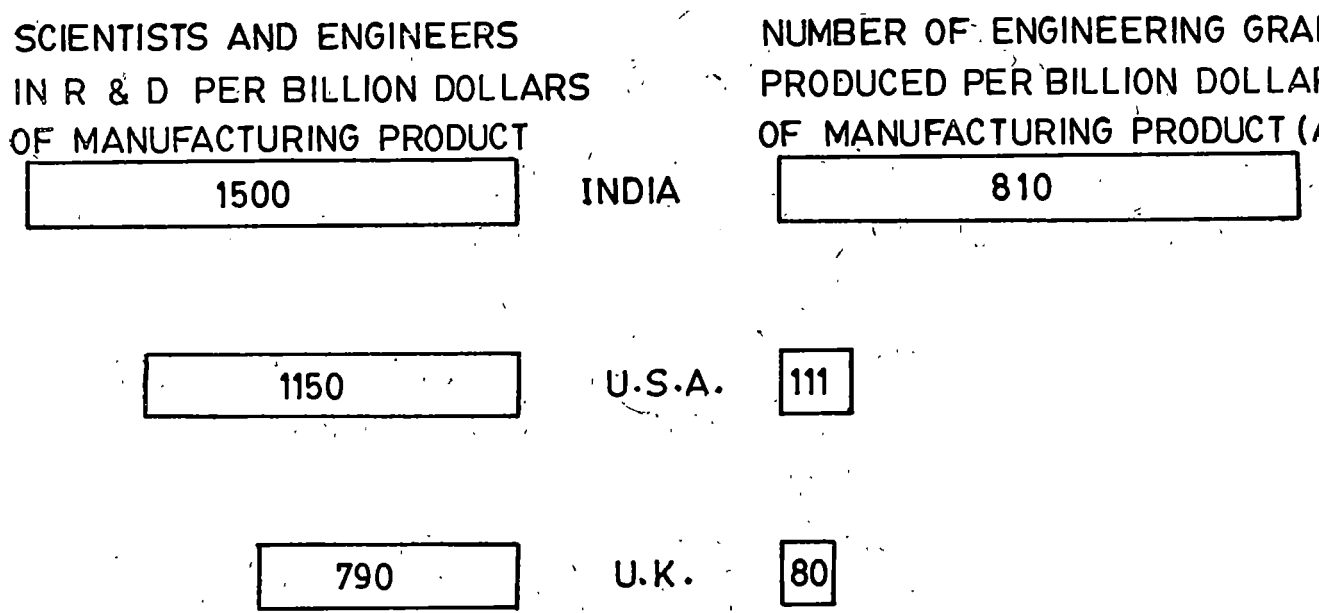


FIGURE 3 SCIENTISTS AND ENGINEERS IN INDIA, U.S.A. AND U.K. AS A RATIO OF MANUFACTURING PRODUCT

Journal of Higher Education
Vol. 9 No. 1 Monsoon 1983

Institutional Quality, Student Input and Output: Analysis of Six Indian Universities

M.A. KHADER AND SUSHILA SINGHAL

The socio-technological changes in post independent India warranted changes in occupational patterns. Simultaneously, the demand for education grew. The educational system in the country expanded at all levels and quite disproportionately at the college level (PsacharoPoulos and Hinchliffe, 1973; Naik, 1975b). Educational institutions multiplied, though established colleges continued to provide educational access to the privileged few and get relatively higher subsidy. This resulted in increased qualitative differentiation among colleges and universities. A linear expansion in educational institutions without adequate increase in inputs is known to result in differential quality (Seshadri, 1976).

One explanation of differentiation in the quality of colleges and universities can be offered in terms of the existing institutional environment, student characteristics and student output. Inspite of the communality of goals and roles, colleges and universities differ from one another by their environment (Astin, 1962, 1968a; Carnegie Council, 1975). A college or university comprises of faculty, students, institutional size, finance, library facility, curricular activities, level of selectivity, financial assistance to students and similar elements. The combination of these elements in an institution creates a context which is unique. The manner of selection of students, for instance, to colleges or universities is not random. Often it is regulated by the level of selectivity and varies across the type of institutions (Astin, 1971; Astin and Lee, 1972; Solmon, 1975).

Despite the meritocratic nature of the selection process, socio-economic status differentials exist within the system of higher education. Where one goes to college is found related to one's position in social structure (Karabel and Astin, 1975; Olivas, 1979). The socio-economic background, if higher,

facilitates ones attending socially select secondary school and enhance the likelihood of attending a relatively selected college or university (Sewell and Shah, 1967; Karabel and Astin, 1975; Alexander and Eckland, 1977). Differences are visible on institutional environment (Astin, 1968; Astin and Lee, 1972), students characteristics (Feldman and Newconb, 1969; Astin, 1977) and student achievement (Rock, Centra and Linn, 1969; Centra and Rock, 1971, Bowen, 1978).

An assumption underlying these researches is that there exists an environment within each college or university which attracts students within a range of background characteristics. The students' background characteristics and the college environment influence his integration into the institution's academic system besides influencing his academic performance. The individual's interaction with the institutional environment and his subsequent academic performance, then, creates a distinct context for that college or university.

In India relatively little research has been done to analyse these differentials and its consequent impact on student behavior. The present paper attempts to analyze variations in perceived environment, students' personal factor, parental socio-economic status, level of selectivity and college achievement by level of university, level of college and type of curriculum.

Method

Sample: Selection of sample is done at two levels, first at institutional level and then at the individual level. At the institutional level, universities are treated as universe of population and selection is made at two stages, macro level and micro level. At the macro level, though there are more than 100 universities at the time of collection of data (1976), University Grants Commission had records available only for 37 universities. Of this, data were available on 14 universities for 3 consecutive years (1972, 1973, 1974) on 17 universities for 2 years (1973, 1974) and on 6 universities only for 1 year (1974). The information is available on institutional characteristics, finance, library facility, size of faculty and their designation, rate of enrolment, number and amount of scholarships and freeships to students. Using these information per capita expenditure, staff-student ratio and percentage of students getting scholarships and freeships are calculated (Table 1).

The data reveals that the composition of universities differs and these can be stratified into three groups, high, medium and low on the basis of these characteristics.

High: These are universities with high per-capita expenditure, low faculty-student ratio and higher percentage of students getting scholarship or freeships.

Medium: These are universities with higher faculty-student ratio but low per-capita expenditure and percentage of students getting scholarships or freeships as compared to good universities.

Table 1

DISTRIBUTION OF 37 UNIVERSITIES INTO THREE GROUPS : HIGH, MEDIUM AND LOW LEVELS

Category	*University*	*Per Capita Expenditure (By Rupees)*	*Staff Student Ratio*	*Percentage of students getting scholar-ships*
	Delhi*	3357·02	1 : 26	36·34
H	Mysore	3120·15	1 . 28	32·02
I	Poona	3316·27	1 : 24	33·15
G	Punjab	3498·37	1 : 27	37·10
H	Nagpur	3275·64	1 : 23	32·98
	Andhra	3724·12	1 : 25	38·06
	Madras*	3650·86	1 : 28	35·14
	Ravishankar	3328·73	1 : 29	34·34
	Osmania	3105·20	1 : 27	32·37
M	Agra	2569·18	1 : 35	27·53
	Dibrugarh	1780·03	1 : 36	25·34
E	Gujarat	2760·64	1 : 30	29·82
	Marathwada	2815·25	1 : 34	30·34
D	SNDT Womens	1310·90	1 : 33	24·01
	Karnataka	1429·53	1 : 34	26·22
I	Kurukshetra	1607·58	1 : 38	25·35
	Meerut	1820·34	1 : 36	27·85
U	Rajasthan*	1911·15	1 : 35	26·41
	Berhampur	1536·24	1 : 38	24·86
M	Kerala*	2584·71	1 : 35	30·34
	Madurai Kamraj	2480·01	1 : 34	31·06
	Udaipur	1350·18	1 : 37	33·61
	Bihar	935·25	1 : 42	18·32
L	Gauhati	1015·08	1 : 40	21·67
	Kashmir*	1214·13	1 : 40	22·03
O	Ranchi	1118·79	1 : 39	20·54
	Jabalpur	805·61	1 : 42	21·00
	Jadavpur	972·89	1 : 38	18·81
W	Kalyani	793·50	1 : 40	16·30
	Utkal*	984·50	1 : 44	17·05
	Sardar Patel	856·94	1 : 41	15·19
	Saugar	1052·25	1 : 45	19·43
	Vikram	972·89	1 : 39	18·36
	Bhopal	795·16	1 : 38	16·82
	Jammu*	689·55	1 : 42	16·58
	Shivaji	890·12	1 : 43	20·67
	South Gujrat	820·48	1 : 39	18·00

**denotes universities selected for mocro level study.*

Low: Universities have the lowest per-capita expenditure and the percentage of students getting scholarships or freeships but the highest faculty-student ratio as compared to good and average universities.

Out of the 37 universities representing 3 strata, high, medium and low, six universities are chosen for the micro level individual analysis (Table 1). Two universities are included in each category and within each university, three colleges are identified using the above characteristics as representative of high, medium and low. Thus a total of 18 colleges are chosen at the micro level sample for individual analysis. The individual level data is obtained, using random sampling procedure on 1265 final year students studying in three-year graduate programmes in Science, Arts and Commerce from 18 colleges.

Variables: The variables consist of dimensions of institutional and individual variables. These are:

Personal Factor: This consists of achievement value and manifest interest. Achievement value refers to the strong desire of an individual to compete successfully with a standard of excellence or expressed interest in undertaking difficult and challenging tasks and a strong sense of optimism. Manifest interest refers to achievement in activities like creative work, art, literary work, debate, sports and games, music and science contests. The two scores are combined into a composite personal score by the method of averaging.

Parental Socio-Economic Status (PSES): It includes the level of education and occupation of father and mother, and the overall annual family income.

Perceived College Environment: refers to the environment perceived by students in terms of facilities, curricular activities, communication between student and teacher, and discipline.

Level of Selectivity: refers to the level of academic performance at school and graded as first, second and third divisions. Selection to B.A., B.Sc. and B.Com. courses in colleges and universities is based on the level of academic performance at school.

College Achievement: refers to the level of academic performance at college and graded as first, second and third divisions.

Tool: Data on personal factor, parental socio-economic status and perceived college environment are obtained using a questionnaire.

Characteristics Inventory: It consists of 18 items on achievement value, chosen from Mukherjee's Sentence Completion Test. It is a forced choice measure of verbalized need for achievement values. The part-total reliability is 0·73. 13 Interest items consist of 7 latent and 6 manifest interest items. 18 items focus on students' perception of college environment. A college with high score on items of college environment is interpreted as having good facilities for students, high teacher-student interaction, discipline etc. The test-retest reliability is 0·81. It also includes items on level of education and occupation of parents and overall annual family income.

Level of Selectivity: is determined by school marks of the sample population (N=1265). This information was obtained from the respective college records.

College Achievement: B.Sc., B.A. and B.Com. grades were obtained from the respective colleges during the later half of 1977.

Hypothesis: Perceived environment, personal factor, parental socio-economic status, level of selectivity and college achievement differ by level of university, level of college and type of curriculum.

Analysis and Results

Perceived Environment: Table 2 presents the results of analysis of variance using perceived environment as the criterion.

Table 2

ANALYSIS OF VARIANCE USING PERCEIVED ENVIRONMENT AS THE CRITERION

Source of variance	*D F*	*F Value*	*P*
L U	2,1262	35·30	·01
L C	2,1262	26·01	·01
T.C.	2,1262	2·44	NS
LU×L C	4,1260	7·11	·01
L U ×T C	4,1260	1·75	NS
L C×T C	4,1260	4·74	·01
LU×LC×TC	8,1256	9·19	·01

L U =Level of University
L C =Level of College
TC =Type of Curriculum.

When the main effects are computed, the level of university and the level of college reveal significant differences ($p < ·01$) but the differences are not significant among students of Science, Arts and Commerce curriculum. Though high level universities as well as colleges differ from medium and low level universities and colleges in providing institutional environment, within a university or college the departments of studies exist as comparable.

Interaction effects of level of university and level of college, of level of college and type of curriculum are found to be significant ($p < ·01$). However, level of university and type of curriculum do not show significant interaction effect. The interaction effect of level of university, level of college and type of curriculum is significant ($p < ·01$). It seems that type of curriculum is significant only in the context of level of university and level of college, and all the three variables can combine differently and produce differences in the institutional environment.

Personal Factor: Obtained results in table 3 show significant ($p < ·01$) differences on personal factor across level of university and level of college.

The main effect of type of curriculum is significant. It means that though students of Science, Arts and Commerce streams selected for the present study, constitute comparable sample in terms of personal factor, the

Table 3

ANALYSIS OF VARIANCE USING PERSONAL FACTOR AS THE CRITERION

Source of Variance	D F	*F Value*	*P.*
LU	2,1262	14·54	·01
LC	2,1262	5·26	·01
TC	2,1262	1·19	NS
LU×LC	4,1260	4·00	·01
LU×TC	4,1260	2·50	·05
LC×TC	4,1260	3·10	·05
LU×LC×TC	8,1256	3·52	·01

LU = *Level of University*
LC = *Level of College*
TC = *Type of Curriculum*

differences on personal factor can be seen across level of university and level of college.

The interaction effect between level of university and level of college is significant ($p < ·01$). Interactions are also significant between level of university and type of curriculum as well as level of college and type of curriculum ($p < ·05$). Significant ($p < ·01$) interaction effect among level of university, level of college and type of curriculum is visible. This is likely to be a consequence of selection procedure adopted by universities and colleges at the time of admission to Science, Arts and Commerce courses. High level universities and colleges attract students with high scores on personal factor than the medium and low level universities and colleges.

Parental Socio-Economic Status: Results in Table 4 show significant ($p. < ·01$) variation in parental socio-economic status across level of universities and level of colleges.

Table 4

ANALYSIS OF VARIANCE USING PARENTAL SOCIO-ECONOMIC STATUS AS THE CRITERION

Source of Variance	*DF*	*F Value*	*P*
LU	2,1262	41·47	·01
LC	2,1262	30·83	·01
TC	2,1262	1·24	NS
LU×LC	4,1260	3·99	·01
LU×TC	4,1260	3·48	·01
LC×TC	4,1260	3·85	·01
LU×LC×TC	8,1256	3·60	·01

LU = *Level of University*
LC = *Level of College*
TC = *Type of Curriculum*

No significant differene is found by the type of curriculum. The interaction effects of level of university and level of college, level of university and type of curriculum are significant ($p < \cdot 01$) This indicates that students who are in high level universities and colleges come from better parental social status as compared to those who are in medium and low level universities and colleges. The type of curriculum seems to matter only within the institutional framework.

Level of Selectivity: Table 5 reveals significant ($p < \cdot 01$) variation by the level of selectivity by the levels of university and the college.

Table 5

ANALYSIS OF VARIANCE USING LEVEL OF SELECTIVITY AS THE CRITERION

Source of Variance	*DF*	*F Value*	*P*
LU	2,1262	50·01	·01
LC	2,1262	56·26	·01
TC	2,1262	1·60	NS
LU×LC	4,1260	8·28	·01
LU×TC	4,1260	21·78	·01
LC×TC	4,1260	3·12	·05
LU×LC×TC	8,1256	21·57	·01

LU = *Level of University*
LC = *Level of College*
TC = *Type of Curriculum*

Evidently the admission policies of high level universities and colleges are based on higher level of performance at school than the medium and low level universities and colleges. Insignificant difference by the type of curriculum indicates that students with similar level of performance at school may opt for Science, Arts and Commerce curricula within the institutions of their choice. Interaction effects of level of university and level of college, level of university and type of curriculum, level of college and type of curriculum as well as level of university level of college and type of curriculum are significant above 5 per cent level. Apparently the type of curriculum matters significantly in relation to level of university and level of college.

College Achievements: Significant ($p < \cdot 01$) differences are observed on college achievement by level of university, level of college and type of curriculum (Table 6).

It means that student's academic performance in their curricular programmes in three levels of universities and colleges are at different levels. Interaction effects of level of university and level of college, level of university and type of curriculum, level of college and type of curriculum as well as level of

Table 6

ANALYSIS OF VARIANCE USING COLLEGE ACHIEVEMENT AS THE CRITERION

Source of Variance	*DF*	*F Value*	*P*
LU	2,1262	8·87	·01
LC	2,1262	25·87	·01
TC	2,1262	10·65	·01
LU ×LC	4,1260	5·30	·01
LU ×TC	4,1260	21·42	·01
LC×TC	4,1260	4·72	·01
LU×LC×TC	8,1256	16·87	·01

LU = Level of University
LC = Level of College
TC = Type of Curriculum

university, level of college and type of curriculum are significant ($p < .01$). This reflects that students' academic achievement in Science or Arts or Commerce stream differs with respect to the level of university or college he or she attends.

Discussion

The analysis support the contention that perceived college environment, personal factor, parental socio-economic status, level of selectivity and college achievement vary by the levels of universities and colleges. However, the type of curriculum matters only in relation to the level of university or level of college.

Observed differences in the levels of univerities and colleges are related to the variations in the institutional attributes like policies and practices, faculty, curricular activities, enrolment rate, teacher-student relationship, peer-group association, library facilities and finance. Qualitative differences in institutional attributes affect the quality of environment and reflect variations among institutions (Astin and Lee, 1972; Alwin, 1974). Not all variations on these attributes can be controlled. It may be important to identify those which can be controlled or manipulated through reallocation of resources, especially finance which is crucial in creating institutional environment. It is important to know where the expenditure are made, what are the rationale for allocation, whether one should look for the proper attributes of faculty or some other productive aspects of academic environment.

Invariably, an elite college is inhabited by students with chosen personal attributes like high achievement value and talent. It means that elite institutions enrol students with a strong desire to compete successfully with a

standard of excellence or interest in undertaking challenging and difficult tasks than average or low level institutions. It is more likely that such students have relatively more talents in creative work in art and writing, athletics and science contests than those in average and low level institutions. Obviously, differences among institutions arise mainly due to the fact that they pursue different admission criteria. Elite colleges and universities attract a disproporionate share of the most able students (Spies, 1978) suggesting that the differences among colleges and universities can be accounted by the characteristics of the students they attract and recruit (Astin, 1973).

Students' entrance to college or university is not a random phenomenon. The system of higher education which is hierarchically differentiated is also a system in which the elite institutions are markedly selective. Evidences suggest that elite universities and colleges are selective using high school marks or ranks as criterion of admission to graduate programmes in Science, Arts and Commerce. More students being keen in joining elite institutions than the number of seats available to them, the level of selectivity becomes highest for the most sought after institutions. Though this explains the substantial relationship between the level of selectivity and the institutional quality (Astin, 1971; Solmon, 1975), it reflects the meritocratic nature of the admission process. Nevertheless, it is possible that elite institutions are fearful that the influx of students would lead to mediocrity, and seek to prevent the demise of academic standards (Schudson, 1972). Academic's unwillingness to share the responsibilities in improving the performance of average students is also equally an important aspect for the concentration of academically talented students in a few elite institutions.

It appears that needs of the colleges as well as universities and the social system coalesce on the question of selectivity. Children from affluent families enrol themselves in elite institutions with high quality instruction and better facilities. The more well rated the institution, the more likely it is to attract students from higher family status. It means college quality is significantly related to social class origin (Harris, 1972; Karabel, 1972). Access to good universities and colleges, thus becomes limited to the privileged few. This indicates the possibility that children of low social origin have little chance of attending quality college. Apparently, social origin has great deal to do with who goes to which institution (Alwin, 1976b ; Alexander and Eckland, 1977 ; Olivas, 1979). Students are differentially selected by different levels of colleges and universities depending on the important achievement related variables like level of selectivity, parental socio-economic status, talent and motivational factors. It is apparent that a student scoring high on personal factor, having origin in an affluent family and having higher grades at school is more likely to attend a high level university or college for graduate programme in B.Sc., or B.A. or B. Com.

Significant differences in academic achievement across levels of university and college explain that level of institution matters in academic achievement. In fact, elite institutions with their relatively better academic

environment seem to attract students from higher social origin. In such a context students, who have a strong desire to achieve and are talented, may markedly differ in their academic performance from those in average or low level colleges or universities. This explains the existing differences in academic achievement across institutions. The fact that institutions differ implies that some do better in academic achievement. Though difference in academic achievement in graduate programme is visible across institutions, further investigations are essential to establish casual connections among institutional quality, student characteristics and academic achievement.

References

1. Alexander, K.L. and B.K. Eckland, High School context and college selectivity Institutional constraints in educational stratification. *Social Forces,* 1977, 5*b*.
2. Alwin, D.F. College effects on educational and occupational attainments. *American Sociological Review,* 1974, **39**, 210–223.
3. Astin, A.W. *The College environment,* American Council on Education, Washington, D.C. 1968(a).
4. Astin, A.W. An empirical characterization of higher educational institutions. *Journal of Educational Psychology,* 1962, **53**, 224–235.
5. Astin, A.W. *Predicting academic performance in college : Selectivity data for* 2300 *American colleges,* New York : The Free Press, 1971.
6. Astin, A.W. and C.B.T. Lee, *The ivisible colleges : A profile of small private colleges with limited resources, New York :* McGraw Hill, 1972.
7. Astin, A.W. Measurement and determinants of the outputs of higher education. In L.C. Solmon and P.J. Taubman (Eds.) *Does college matter? Some evidence on the impacts of higher education.* New York, Academic Press, 1973, 103–127.
8. Astin, A.W. *Four critical years.* San Francisco : Jossey Bass, 1977.
9. Bowen, H.R. *Investment in learning.* San Francisco : Jossey-Bass, 1975.
10. Carnegie foundation for the Advancement of Teaching More than Survival : *Prospects for Higher Education in a period of uncertainty.* San Francisco Jossey-Bass. 1975.
11. Feldman, K.A. and T.M. Newcomb. The impact of college on students, Vol. 1 : *An analysis of four decades of research.* San Francisco : Jossey-Bass, 1969.
12. Harris, S.E. *A statistical portrait of higher education* New York, McGraw-Hill, 1972.
13. Karabel, J. Community colleges and social stratification. Submerged class conflict in American Higher Education. *Harvard Educational Review,* 1972, 42, 521–562.
14. Karabel, J. and A.W. Astin. Social class, academic ability and college quality. *Social Forces,* 1975, 53, 381–398.
15. Naik, J.P. *Policy and performance in Indian education* 1947–74. New Delhi : Orient Longman, 1975(b).
16. Olivas, M.A. The dilemma of access : *Minorities in two-year colleges.* Washington : Harvard University Press, 1979.
17. Psacharopoulos, G. and K. Hinchliffe, *Returns to education-An international comparison* San Francisco : Jossey-Bass, 1973.
18. Rock, D.A., Centra, J.A. and R.L. Linn. *The identification and evaluation of college effects on student achievement.* Princeton : Educational Testing Service, 1969.
19. Schudson, M.J. Organizing the meritocracy. A history of the college entrance exanation board. *Harvard Educational Review,* 1972, **42**, 34–69.
20. Seshadri, C. Equality of educational opportunity ; some issues in Indian education *Comparative education,* 1976. **12**, 219–230.

21. Sewell, W.H. and J.P. Shah, Socio-economic status, intelligence and the attainment of higher education. *Sociology of education,* 1967, **40**, 1–23.
22. Solomon, L.C. The definition of college quality and its impacts on earnings. *Explorations in Economic Research,* 1975, **2**, 537–588.
23. Spies, R.R. *The effects of rising costs on college choice.* New York : College Entrance Examination Board, 1978.

Commonwealth Universities Yearbook 1982

THE ASSOCIATION OF COMMONWEALTH UNIVERSITIES

JOHN FOSTER HOUSE, 36 GORDON SQUARE, LONDON, ENGLAND WCIH OPF

Price +£48 post free

A comprehensive guide to university institutions in Australia, Bangladesh, Botswana, Britain, Canada, Ghana, Guyana, Hong Kong, India, Kenya, Lesotho, Malawi, Malaysia, Malta, Mauritius, New Zealand, Nigeria, Papua New Guinea, Sierra Leone, Singapore, South Pacific, Sri Lanka, Swaziland, Tanzania, Uganda, West Indies, Zambia and Zimbabwe

The 1982 *Commonwealth Universities Yearbook* is a unique guide to the staff, courses, organisation and activities of university institutions of good standing in the Commonwealth. This 58th edition contains in 2,650 pages the basic facts about these universities that are needed by university teachers and administrators, students, parents and others.

For each of 350 university institutions (including six new ones) there is a chapter containing general information, including descriptions of First and Higher Degrees, a complete academic staff list arranged by subjects, and statistics.

For each of nine countries there is a major essay by a leading academic figure which is an authoritative guide to university education in that country. New are essays by Prof. D.D. Campbell, University of Alberta (*Canada*) and Prof K.M. de Silva, University of Peradeniya (*Sri Lanka*).

Of six appendices, one describes the Commonwealth Scholarship and Fellowship Plan; and another contains statistics of students from abroad at universities in seven Commonwealth countries.

There are also a 25-page Bibliography, a 165,000-Name Index, 45 pages of General Indexes, lists of the titles of degrees and diplomas granted by the universities, and 22 other indexes, tables and lists each facilitating reference to the opportunities for study in a particular country.

The Yearbook is published annually in four volumes which are sold only as a set.

Standing orders can be accepted from those wishing to have a copy of each future Yearbook sent to them immediately on publication without further re-ordering.

In **India** orders should be addressed to UBS Publishers' Distributors Ltd., 5 Daryaganj, Ansari Road, P.B. No. 1015, New Delhi 110002.

+£33.60 to staff of member institutions of A.C.U.

Journal of Higher Education
Vol. 9 No. 1 Monsoon 1983

The Higher Education Scene in Britain Today*

ASA BRIGGS

Education is a subject of international concern. There are different educational systems in different parts of the world but we do have shared interests in the whole enterprise. My subject is *The Higher Education Scene in Britan Today*—but it will, I hope, be directly related to the kind of questions which concern us at the present time in the field of education, in whatever part of the world we happen to be.

The first point that I want to make by way of introduction is : how we view the scene in Britain depends, I think, on the vantage-point from which we view it. Places *do* look different, scenes *do* look different according to the angle from which one views them. Viewing the English educational scene from Delhi is a rather different experience from viewing the English educational scene from London—or, for that matter, from Oxford or Milton Keynes or Brighton.

If one is viewing a scene from *outside* the society, one inevitably tries to pick out what seem to be the essential elements in the picture, when viewed comparatively and at a distance. The points that still stand out in relation to the higher education scene in Britain when it is viewed from a distance, seem to me to be very basic and simple ones.

First of all, the system of higher education is a very varied system. It has a great deal of variety in it. It does not consist of standardised institutions which are all of the same type. The more you actually get closer to the detail, the more the variety begins to be apparent.

*In fulfilment of a longstanding commitment to write for JHE, Lord Briggs graciously agreed to the publication of his talk at New Delhi last winter. We acknowledge with thanks the courtesy of India International Center in handling tapes and efforts of Mrs. Shanti Varma in transcribing the text, Editor.

Secondly, it is a system which to some extent is stratified or sectorised in a uniquely British way (not necessarily for the good). For example, there is a distinction within higher education between what is done in the Universities, on the one hand, and the Polytechnics, on the other. We talk of a binary system : two separate sets of institutions, financed in a different way—and that division remains as real as it was in periods in the past.

Thirdly, there is still selective entry to the universities. That selective entry distinghuishes the British system from a number of other systems. It is much more tightly selective than in most other countries : particularly so, if compared with the American system. Moreover, at the moment, if anything, in the course of the last two or three years, the opportunities for a member or the age-group going to university have diminished rather than increased.

Fourthly, although there is a selective higher educational system, the school system is becoming increasingly comprehensive at the base. The entry points into the university lead not as they did earlier through grammar schools which were concerned specifically with children a higher proportion of whom were thought of as being potential members of a university, but through schools where the majority of children do not have university in view. And we live in a society where a very large number of people do *not* have university in view. Of course, within the school educational system there is still a division between what, in England, are called "public schools", which are, of course, private schools, on the one hand, and the schools which are provided by the local authorities, on the other.

Finally, there is the fact that there has always been a willingness within that rather complex structure of the English system, to innovate. Indeed, I would say that the most important characteristic of the system viewed from outside is that it is a system which to some extent is seeking all the time to balance tradition and innovation. Sometimes the traditional elements seem very strong; sometimes the innovatory elements have been extremely powerful. The balance is never quite the same between tradition and innovation, but there *is* always some kind of balance there.

Looking at the British system from a distance, then, all those points would, I think, have to be made about it.

Three Vantage Points

However, if we think of the vantage-point from which *we* view, we do need more intimate vantage-points from which to look at the scene. Instead of dwelling merely on generalisations, I would like to take vantage-points which are derived essentially from my own experience. I propose to try to take three vantage-points which, I think, would be helpful in providing a rather closer look at what is happening. They are really very different from each other, and have contributed to the way in which I myself look at questions of higher education. I believe that nearly all the most interesting

things that can be said about education are, in the last resort, autobiographical. (I went to Geneva to take part in an International Conference a few months ago and I did expect that statement to be made in Geneva, the place where Rousseau lived ; and I did expect that Rousseau's name would be mentioned. But I was a little surprised to hear it mentioned ten times in the course of the first five minutes). The autobiographical element in education does enable one to a evaluate. And if you can relate autobiography to perspective, then it is possible, I believe, to get some greater sense of the vantage-points about which I am going to talk.

Let me draw a very sharp contrast between the first two of the vantage-points in my own experience : Worcester College, Oxford, and the Open University.

In Worcester College, Oxford, I am head of a smallish college, with 300-plus under-graduates, and 100 post-graduates. It has many of the characteristics of a closed society. This year, we are going to celeberate the 700th anniversary of the founding of the first Benedectine monastery which was there and from which the educational enterprise originally began. So there are 700 years of unbroken history behind it. It is a small institution where everybody knows each other by name and by face. There is a very strong sense of *place* in it, of the identity of a particular place. (I was out of it for 21 years ; I went back to it—and there are moments when I feel, on a bright, moonlit night, that I have never been out of it at all. It has an extremely powerful sense of place.) It is one piece, of course, of a much bigger pattern. It is one college in a complex of colleges, and every college in Oxford does, to some extent, have its own very distinctive identity. The University, in Oxford, is a much more shadowy institution that the colleges which make up the University.

The undergraduates who come to the university are almost all, in the case of my own college, of the age-group between 17 and 21. One or two of them are a little bit older. They are all used to working in academic work. They have all got a sense that the university course is something which they can understand before they come: they have got to learn how to tackle it, how to be independent learners, but they do not move into an unknown world when they come up to Oxford.

I bear all those points in the back of my mind when I think about the question of the vantage-point of Worcester College, Oxford.

Let me now take the Open University. It provides almost a complete contrast. My position in the Open University is that of Chancellor of the University. I am not an executive officer of the University. The Vice-Chancellor of the Open University, like the Vice-Chancellor of all our universities, is the person who is really in charge of it. But the Chancellor keeps a watchful eye on it, is there in certain circumstances to try to help it in its outside relationships. I see as many of the students as I can, and I do formally hand over to them, at a number of degree days, their degrees. I go out at the degree ceremonies which are held in places in England which never have had universities in their history, like Tunbridge Wells, or Derby,

or Preston, and I hand out degrees where, after the degree ceremony, I can walk outside the hall and I will find children taking photographs of their parents who have just got their degrees, rather than the other way around.

It is very large. It has an intake of 30,000 students a year. They come from all over the country. They are doing all kinds of subjects. They have all kinds of backgrounds. It is a new institution. It took its first students only in 1971. It is 12 years old—and that is a very short span in the history of an institution.

It has no particular place with which it is exclusively identified, although its headquarters are in Milton Keynes, which is named after two of the most famous names in English writing : Milton and Keynes. And in that particular place you have a headquarters which is related to a regional network : scattered around about the country there are regional Centres and it is those regional centres that provide the immediate framework within which the student of the Open University operates. In Oxford, the college in which I am is part of a bigger pattern. In the Open University, the central organisation of the Open University actually itself creates a much bigger pattern, so that there is a very different relationship between the part and the whole.

Most of the students in the Open University, though not all of them, are new students. Many of them have no idea of what it is to do academic work. Many of them are uncertain about the nature of the enterprise upon which they are embarking. Moreover, the courses are organised so that they can spend as much time as they want or need in order to complete them—or, indeed, *not* to complete them, because the whole way of organising the Open University is really to *not* say that there is a particular period of time, say three years or four years, which is the appropriate time to finish a degree, but to let the student do the degree in whatever period of time *he* finds it necessary in order to complete it. In point of fact, by a very curious kind of system, most of them do complete it within three or four years ; the numbers who take long tail away and fade away, although last year there were still some people taking their final degree who had enrolled in the first intake of 1971.

Now those are the two contrasting vantage-points from which to view the scene. You can see that when you take those vantage-points, you are drawn a great deal more, in an intimate sense, into what is going on in the scene than if you deal with generalisations at a distance—or, for that matter, if you treat education in purely statistical terms, which, of course, is one very common way of doing it these days.

I would like now to draw in the third vantage-point : the University of Sussex. I have been very strongly influenced in my own educational experience by being at Sussex, therefore I do tend to view things still from the vantage-point of one of the people who had the enromous privilege of creating a new university. To me, that unique experience has influenced the way in which I look at the Educational scene today. (Incidentally, I was the very first academic to be appointed to the staff).

We started the University of Sussex about ten years before the Open University started. For the first two years, there were more cows browsing about in the fields of the University than there were students in the classrooms ! We had to create every building on the campus afresh and we had the task of trying to translate a number of dreams, if you like, into realities—in circumstances which were exciting but not entirely easy. The 1960s is probably the most interesting decade of this century as far as education is concerned, at least in Europe, because it did lead to a great expansion of development of education in all places and to the creation of new institutions. A tremendous *élan* was pushing through the '60s. But it was a disturbed and far from easy decade, and one which historians will have a great deal of fun writing about, later on. Producing a new institution during a decade when all old institutions were being questioned, in Europe, was certainly a greatly exciting venture.

We were only able to produce the University of Sussex as we did because we had a small and a dedicated planning team which looked at the logistics of growth in terms of the academic opportunities of the university. Having been involved with the same kind of group of people in that particular kind of planning, which involved resources, and ideas about curriculum, almost everything else which I have seen and heard about educational planning since has seemed to be inadequate in various respects or incomplete.

We were able to build an institution which did itself carry out a considerable amount of change through a period of very rapid growth. When I left the University of Sussex in 1976, there were 4000 students : we had started with 51 in the first year—37 women and 14 men (what was described as being a very interesting sex ratio!) : we ended up with a University which was more equally divided between men and women than any other university in the country. (As a result, I was ready, when I got to Oxford, for what seemed to be the very daring experiment of a small college becoming co-educational –for the first time in the history of Oxford—and it seemed to me that this was a perfectly natural development, nothing one should regard as being totally out of the ordinary—whereas to some of my colleagues in Oxford it represented the imminent approach of Revolution !).

Three Features

In relation to those three vantage-points, let me now pick out three features of the Higher Education scene in Britain which emerge out of each of those three kinds of institutional complexes, three feature which I consider particularly noteworthy.

To my mind, the most important feature of the Oxford system (and, for that matter, of the Cambridge system, although perhaps a little less so) is not the college but the individual student's *tutorial.* The thing that struck me after I got back to Oxford after an absence of 21 years, was that the tutorial system was stronger rather than weaker, I think, than it had been when I left. I think it would be very difficult now in Oxford or Cambridge,

to break that tradition. It is still the case in Oxford that each week, individual students, pairs of students or sometimes very small groups of students go to an individual tutor and write an essay or produce a piece of work. Even if they are science students, or mathematics students, or engineers, they will be forced to produce regular pieces of work of their own which are handed to a tutor or read in the presence of a tutor, on which he provides his own individual comments. There is, therefore, a *personal* element in education which I regard as being of the utmost importance, educationally.

It is possible within the framework of the tutorial system to allow for changes in the pace and character of learning, where the length of the courses vary, so as to take account of the student's own pace. (This aspect is similar to that of the Open University).

The tutorial system is a very flexible system. It is a very expensive system to operate. But it is one which I think is extremely important, and it is one which has had a big influence on the whole of the higher educational scene in England. On the whole now in most Universities there is a far greater emphasis on small group teaching, even despite the budgetary cuts, than there was a quarter of a century ago, when the main form of teaching in most universities was through the large lecture. Undoubtedly, the change has really been influenced in large measure by a sense that in some universities it was possible to have a tutorial system. In Sussex, for example, we took over a tutorial system from Oxford and Cambridge: it did not really work quite in the same way; it was not so much an accepted part of the tradition.

That idea was taken over into the Open University also. It would be a complete mistake to believe that the Open University is merely using modern 20th century technology. It *is* using that technology—but it is using it also along with other elements in the traditions of English education which really go back to the tutorial. Let met expand on this. You enrol as an Open University student. You have the opportunity, when you enrol, of being given a bundle of materials of very high quality for every course that you study. These materials are also obtainable in shops, so that if you are not a student you could actually buy the published material. Most of this material is, I think, very well done on the whole. You then have the opportunity of not only looking at the material but you also have the opportunity of looking at television programmes and listening to the radio. Many people look at the material, many people watch the programmes, many people listen to the radio who never enrol as students. What *is* it that makes a student? It is not just looking at the programmes or listening to the radio or even looking at the published materials or the books. It is following the Course with a *Tutor*, to whom you do send in work and from whom you get individual comments back on the quality of your work. There is a battery of ways of learning and the object of the exercise, as in the case of the Oxford and Cambridge system at its best, is to encourage the student to become an independent learner and not just somebody who expects to be taught. I do

attach an enormous amount of importance to the idea of the individual becoming an autonomous *learner*, as independent as possible—and I regard everything that contributes to that process as being a means to an end.

I think, therefore, that when I look at the higher education scene from the vantage-point of Oxford to begin with, I am forced into thinking along those lines about the nature of the tutorial and its influence on the way in which the Educational system has developed.

If I take the Open University, what has been the most outstanding feature of the Open University so far which, I think, contributes to our educational understanding?

To my mind, the most important feature has been the development of the idea of a course team. This is something totally different from the idea of a tutor, and I would like to develop this a little. To my mind, the idea of the Course Team is more important than the idea of distance learning, in relation to the Open University. Distance learning is a very important way of looking at learning. It rests on the idea that somebody working at home, in his room, can be taught at a distance in various ways, can learn at a distance with the help of modern technology and tuting system. But the course unit is something which is indispensable, I think, to the success of the way in which things are learnt. In the Open University there are about two hundred Courses and each of these Courses has been prepared by a team of people which include academics from the university, on the one hand, and people who are concerned with publishing and with broadcasting, on the other hand, working together as partners in a team. If you look at an Open University syllabus, you will see that through the way it organises its Courses it does something that most other universities do not do. At the beginning of every course, it lays down quite clearly what the objectives of the Course are: one, two, three. Then it will describe how the course is really going to be developed, given those objectives: it will be developed through the use of the new technology, through good publishing, through the influence of the private tutor, and also through summer schools, where the students will be able to get together to work in summer.

Now it has been an extraordinarily exciting educational venture to bring together people who are primarily concerned with sound radio and television and people who are concerned with Education, in the same team. Last year, for the first time in the history of the Open University, the new BBC studio complex was opened at Milton Keynes, where people do actually prepare the programmes. But they will prepare them only after there has been a very full and elaborate discussion through the course team, and only after the material which is produced by the course team has been sent to outside assessors who give their own opinions of whether the mix is right and whether the mode of treatment is right. So there is a great deal of self-evaluation at every point in the course team process.

I do believe that it is most important, given the tremendous possible power of television in our society, that we should learn how to use it intelligently for educational purposes as well as for other purposes. If we fail to

do that, we are failing to make use of television. But it is an expensive medium in education and therefore you have got to decide where you can use it most effectively. There are some courses, of course, where the television element is much more suitable that it is in others: where, in fact, you have got to put more money into television. Now it can be used marvellously in relation to the teaching of mathematics, in certain respects. It can be used in relation to the teaching of physics. It is indispensable in relation to the teaching of certain technology subjects. It is obviously of tremendous importance in relation to the visual arts. But it is less important, I think, in relation to some of the other subjects like English literature, which is of tremendous interest to people in the country. Therefore the television element has got to be worked out by the course team in relation to other elements which form part of the mix. Through the development of the course team, moreover, there is a more intelligent assessment, I think, of the instruments of Education, as well as the objects of particular courses.

Now let me go to Sussex and ask what it is about Sussex that would stand out in my mind most? It is the importance of inter-disciplinarity in modern education. When I had the privilege of going to Sussex I came to the conclusion that it would be totally wrong to create a new University where everybody went out of that University doing what most people were doing in other universities in England at that time: single subject Honours degrees. It is true that in Scotland there was an older tradition of mixed degrees of various kinds and there were some combined degrees in other British universities. There are far more of them now than there were when Sussex was founded. But my main objection to the combined subject degree of the kind that I have seen in so many universities in England is that you do not know who you are really working with: you do three-quarters of your time with one man and a quarter with another, or a half with one and a half with another—and no effort is made to see how they interlock, except in your own mind. I think inter-locking is a very difficult activity: it needs to be constantly monitored and it can never be taken for granted.

Further, as far as specialisation goes I wanted to get away from the idea that we could make real advatanges in knowledge in the 20th century through increasing specialisation. I was fascinated by the fact that in Biological Sciences, where so many new developments are taking place, like, for example, the discovery of DNA round about that time, one had to have a team of people of different backgrounds and different disciplines in order really to make advances. I felt the same thing was completely true about most of the problems which previously had been dealt with mostly by economists working on their own, because in relation to Economic growth and in relation, more recently, to economic breakdown, it is impossible, I think, to look at the issues which arise in the real world without being able to relate economics to politics, economics to the pattern of resources in geography, economics to psychology, and economics to sociology. In other words I believed, and still most emphatically believe that a university education should enable one to see *inter-connections*, and not just to master particular Disciplines.

I am often questioned whether the quality of teaching suffers, in inter-disciplinarity. One has *always* got to watch out for quality—but, of course, one has also got to watch out for quality in disciplinary courses, which very frequently can become derivative in quality, with the text book there. The most exciting thing about the inter-disciplinary courses is that you have got to do them without text-books. Therefore the quality of inter-disciplinary teaching does depend on two things: first of all, the disciplinary quality of the people who are involved in the dialogue and the development, and secondly, on their own capacity as it were to work together in a group, to *think things out* rather than just to put a little bit of this in with a little bit of that. I would not, for instance, regard adding a little bit of sociology to politics, say, or to economics, as being in any way inter-disciplinary. I would regard that as just adding one bit of a discipline to something else. Call it *multi-disciplinary*, if you want it to be complementary, but it would not be *inter-disciplinary*. Inter-disciplinary work rests on a group of people coming together and trying to decide on what topics they can deal with in an inter-disciplinary fashion, and in what order, and I think it still requires a drawing on disciplines in order to make the work really effective.

Let me cite an example in my own experience. It was possible to develop inter-disciplinary science courses on properties of Matter by bringing together scientists who previously would not necessarily have given a common course. They spent a lot of time however, in discussing what they would and would not include: ultimately, we found it impossible to relate biological sciences to physical sciences in the way we wished. Therefore we had to have two separate approaches, if you like, to the subject.

On the other hand, we were able to develop a number of courses which had inter-disciplinary insights in them: for example we had one which we called The Modern European Mind, where really, quite genuinely, there was infeeding into that from various disciplines, and something came out of it which was quite different from what it would have been if that subject had been taught just by historians, or just by psychologists, or just by sociologists, or just by politicians, and so on.

The device at Sussex which still stands and which, I think, will stand whatever difficulties of an economic kind may arise, is the device of organising subjects not into departments, which was the pattern in 1960, but into Schools of Study where different subjects are studied within that School in relation to each other and where everybody who is working in that School, whatever the particular discipline with which he is primarily concerned, will share a good deal of the work with other people who are concerned with other disciplines—so that when they do their common work together the insights and knowledge of one group will be brought to bear upon the insights and knowledge of another group. The fact that the term "School" is now used much more widely (sometimes I think very inadequately and unsatisfactorily), is, I think, a sign that that "School" concept, rather than the "Departmental" concept did have some value in the field of higher education.

When I go back to those autobiographical elements of my own experience, those, then are the three aspects that I consider the most notable, most worth emphasising, most worth considering; from Oxford, the Tutorial system; from the Open University, the Course Team, from Sussex, Inter-disciplinarity.

Six Contemporary Features

What about the higher education scene now?

I would like to pick out six very main points which seem to me to be of crucial importance in the British system. I am now broadening it out from the three places which I have been talking about.

First: in the light of the changes that have taken place, there is a continuing need for all people concerned with higher education to try to relate the traditions which they inherit in relation to higher edcuation, to the capacity and the will, equally important, to *innovate*. Innovation, in higher education, can never be taken for granted. Some innovations are bound to be less successful than others. I would now be in a position, if I were to take the University of Sussex as an example, to point to one or two of the things which we tried to do at Sussex, which were much less successful than some of the things that we thought had an even less chance of succeeding.

Now where does innovation spring from ? I think it must spring essentially from *inside* the academic community. But in order for the innovation to be effective, it will need effective modes of implementation. And the effective modes of implementation seem, to me, to require in each particular case a combination of team effort and a very intelligent assessment of resources.

Within the educational scene in England, there is still a good deal of innovation going on rather quietly, scattered about the place, bringing in sometimes new complexes of subjects—some of it now in the technological subjects, in engineering for example, some of it, also, arising in relation to the way in which Linguistics and the whole of that field of activity is being carried through.

Secondly : within this particular system that I have been talking about there has, I think, always been a striving on the part of a number of people at any rate for what I would call excellence. By this, I do not necessarily mean that the excellence is excellence measured entirely in terms of the traditional courses, but excellence particularly, perhaps, in relation to the introduction of new courses. It is when one is doing *new* things that one wants to be quite sure, after whatever exeprimental period is necessary (and an experimental period *is* necessary) that one is really doing them in the best possible way. And I find that the emphasis on excellence is a point which is basic to the system. I was in the United States in the course of last summer and I was fascinated by the amount of talk that is going on in the United States at the present time about what they call the problem of "quality" in higher education. Within the British system as it has developed, there always has, I think, been that particular emphasis there.

Thirdly, is the emphasis upon the individual student and his needs, the emphasis on the *learning* process, not on the process *of being taught*—and the willingness to use all kinds of ways to do it.

Fourthly, as I have gone into at length earlier, the importance of trying to maintain inter-disciplinary interests in a world of problems rather than of disciplines.

Fifthly : the importance of being able to think within the context of the way in which the knowledge acquired at a University is being applied.

Finally : the capacity within the system of being able to take a long-term view of the *future*, and not just to respond to immediate needs, however important they are.

All those features, I think, are still there, within the higher educational scene.

Problems Today

If I turn to the immediate scene, however, I would be unrealistic if I were not to refer to the *problems* which arise in higher education in England today, as in many other places.

First of all, there has been a very sizeable cut in the amount of money made available to universities and to polytechnics and, most recently, to the Open University. There have been cuts, and some of the cuts have not just been cuts into the flesh—they have been cuts into the bone. The attitude of the Government at the moment towards educational expenditure is that there is a limited sum of money which is available for educational expenditure ; that sum has clear limits tagged on to it ; the money must be spent in the educational field—but it could include school education, or higher education or continuing education : but what one gains, the other will, necessarily, lose. Out of that same budget, also, there has to be derived the money which pays for student fees and charges. And that comes out of the total global sum and there is no way of increasing that global sum. So the task of the Secretary of State for Education and his officers in the Department of Education and Science is really to try to work out the proportions of money which are spent within the different sectors of education.

Now there are demographic changes which, of course, do influence the amounts of money which are required. We are moving into a period when the school pupulation is falling. At the same time, this last year we did reach the peak size of the University age-group. From now on, in fact, the university age-group will go down, too, into the 1990s. So there is a certain amount of leeway to be made within the global sum for purely demographic reasons.

But having said that, supposing that one believes, as I do, how important it is to try to educate adults and to develop continuing education of the kind that the Open University does, the money for such development is bound to have to come out of the university budget, or out of the school-

budget. And there are some very, very hard choices to be made within this area.

Whether, and to what extent, this policy will last and for how long is largely a matter of the economic climate and economic conditions. But these cuts have been very serious.

Now the second point that I would like to make is that while it is the task of the Department of Education and Science to decide how much money is spent on different kinds of education, it is still the task, as far as the university expenditure is concerned, of the University Grants Committee to distribute the amount of money which is thought appropriate for university education amongst the different universities.

People often ask me whether Government lays down rules in matters relating to the distribution of finances amongst universities. I do not think there has been any direct intervention by Government so far in the Universities except through the University Grants Committee. On the whole what has happened is that earlier, the University Grants Committee itself used to say to Government that it needs a certain sum of money for higher education : it explained why it needed it in terms of the number of students, the number of institutions, the kind of education that was provided. Now, with the cuts, the University Grants Committee has not been asked by the Government to give it that vital piece of information, which is how much the universities *need*. Therefore, it has had to operate within a sum of money which has really been plucked out of the air by the Government, in relation to other forms of Government expenditure. But it has then been given the very difficult task of separating it out between the different Universities. But the Government itself has not so far intervened ; the decisions have come from the University Grants Committee. What the Government did do then was that it offered a very generous scheme of money for early retirement. It did that, however, only after consultations with the University Grants Committee, and it was left to the latter to implement the way in which the Government provided the money.

Since in India you also have a University Grants Committee system, I would like to discuss the changing role of the University Grants Committee in Britain, keeping in mind the more stringent financial constraints under which it has to function today.

I was a member of the University Grants Committee for nine years (which is about as long as one can be a member of that Committee). I saw it work at a very interesting time, in the late 1950s and the early 1960s, before I became Vice-Chancellor at Sussex, when all the emphasis was on University growth. Later, however, the University Grants Committee was forced to come to a decision that each university would be given a number of students which it was not allowed to exceed. If it exceeded this number, then there would be, or might be, financial penalties attached.

Now the reason why the University Grants Committee followed this policy was because of this notion of the "package" to be spent on education. Clearly, a university could take extra numbers and reduce its unit costs.

But at the same time, since every student does require a fee-and-charges element in his own maintenence, the Government wanted to restrict the number of students within the system and not just restrict numbers in particular universities. Today we are going through a rather agonizing process of trying hard to cut down our student numbers. It is an extremely difficult task in a college of 300 or 400 to know whether the numbers you are supposed to cut down fall within the ordinary margins of statistical error. But we are forced, in fact, to cut down our numbers, and financial penalties will be attached to us as a college unless we do so.

The other way in which the University Grants Committee has come into the system is that it has really discriminated between Universities in determining how much of the cuts they will take. In the past, it has always been the tendency for the University to look at the unit costs of different universities and to determine how much the university would get, on calculations which certainly took into account the levels of unit cost and the university programme in question. At the last distribution of money the University Grants Committee decided that there were certain universities which should be cut much more savagely than others. Those universities have suffered very great difficulties since ; I can think of two in particular : the University of Salford, in Manchester, and the university of Bradford (and they are not very happy about the fact that they are also now being attacked because it is claimed that now they are taking more numbers than they should have done under their numbers quotas as well). But there has been a good deal of uneasiness about the way in which the system operates.

All I would really like to emphasise is that if there *is* going to be a University Grants Committee system in a country, it must operate on a basis of mutual confidence between the unit elements in the system and the people who are running the University Grants Commitee. In the past, it used to work in England in what was thought to be almost a classic form. There was a Five-Year Plan : the University was given its money for five years, it could then do what it liked with it in five years. Then there would be a so-called "visitation", and then there would be a further distribution, and if the university had not done as well as the University Grants Committee thought it had in the previous five years, it would be penalised for the next five years. It used to work in that sort of way. The five years was then reduced to three years, and the three years was then reduced to one year : now, in fact, it is very difficult for a university to have any longer-term plan which could be underwritten in any way by the University Grants Committee. But the University Grants Committee would claim that a certain amount of duplication can be cut out, that there is room for rationalisation of the system in various respects.

The effect of it, I think, is that there will be something more like a University *system* in England than there has been in the past. When the Robbins Committee reported on higher education in England some years ago (the last big Report on the subject) while referring to the system of higher education, it said : "The system of Higher Education—if it can be called a system..,"

But I am not sure that it could really have been called a system entirely clearly, until fairly recently. However, I am sure that in future it is going to have systemic qualities—and these systemic qualities will require very careful examination.

There has been a lot of worry about the fact that, given these circumstances, the universities have had to get rid of academics. And they have had to get rid of them, in some cases, in pretty large numbers. The Government introduced a very generous Early Retirement Scheme, as I mentioned earlier, and there have been very large numbers of early retirements in quite a number of universities. In the University of Cambridge, for example, there has been quite a remarkable number of early retirements—far more, for some reason which is not entirely explicable, than in the University of Oxford. The same is the case with other Universities. So faculty have been disappearing from the Universities and leaving, in their late fifties in many cases.

Now the effect of this does not necessarily mean, of course, that those people whom the university would most like to see stay are the people who *do* stay. That is the first point, obviously so. But secondly, even despite this blood-letting process, there are also, at the moment, very, very few new post in Universities available. In fact, over the last two or three years I have had the sense of there being a kind of missing generation in the university community of the young academics who used to come in straight from their degrees as post-doctoral students, into the universities as university teachers. In the whole country last year, including Scotland and Wales, there were only two posts that were advertised in History, my own subject, and one of those was, in effect, already taken up before it was advertised. Therefore there are an enormous number of very bright and able people who have just taken their doctorates, who are not getting university jobs : they are not finding it all that easy to get jobs in other educational institutions either.

The effect upon the universities is that you will get very odd age-structures in the future. I regard a university as a place which should not only have a very mixed set of disciplines in it but also, I think, different ages, in order to complement each other. We shall, however, get some very odd age-shapes in relation to universities as a result of what has been happening. The Secretary of State for Education has been worried about this himself, and there has now been a so-called "New Blood Scheme", in which a limited number of new university posts are being created, particularly to be filled in science and technological subjects, and those new posts will do a little to help the problem, I think. But they will not go very far, certainly, in dealing with the age-gap question.

Another problem, of particular interest to India, is the way in which it seems to me that we have lost ground—over the last few years quite seriously —in relation to overseas students : because of, first of all, the policy of discriminating fees, and secondly, the policy of charging something nearer the economic fee. I have always believed very strongly myself that the great

merit of a university is that it can be an international institution. Therefore I do feel how important it is to have students in a university who do come, wherever it is possible, from a wide variety of different countries. I think there will be, over the years, a recognition of the importance of this issue. It has been fought very hard by the vice-chancellors, it has been fought by a number of other groups in the country. In my own College we are just managing to hold our overseas students' proportion with a great deal of difficulty. But there is an increasing need to go and recruit—in a very, very careful way—and if necessary also to try to find increasing financial support in order to do it, since this has come at a time when there are all those other kinds of financial pressure that I have been describing.

Lastly, to take up another element of gloom, as it were, in the scene : the other sector in higher education which I would have like to have discussed a good deal more, the polytechnic sector, is itself undergoing quite serious cuts. A new body has been set up by the Government, which is just coming into action : a central body to deal with the question of polytechnic numbers, courses and expenditures, with a view to looking at the cost elements in the polytechnic field. This body will, I think, try to introduce some of the same elements which are already there in the university field.

The Future

In conclusion : given all this short-term gloom—which is undoubtedly there, and which I think does affect attitudes inside universities—how will it be possible to maintain that element which I think is most essential in relation to higher education : a sense of vision in relation to the future ? All the problems that I mentioned in the beginning of an academic kind, all the opportunities of an academic kind are still there. We have not got rid of the question of higher educational development merely by cutting the amount of resources available for higher education.

I would argue that we do need, in relation to the higher educational scene at the present time, first of all, some pretty strong leadership. And I think the leadership will be increasingly important within the university itself—within the single university as an institution. Certainly the effect of the cuts has been to turn a great deal of attention towards the internal management of the university and the way in which its own priorities are set. But it is very, very difficult in a university if the effect of the cuts is to make everybody worse off and not, as it were, to think carefully about what are the priorities in such circumstances. So I think more and more importance will consequently be attached to the qualities of leadership, which includes managerial leadership, in relation to the units of higher education.

Secondly, I think we will need to continue to generate academic ideas at the grass-roots level. I have never, myself, regarded universities as being service-stations of society alone. I think their role is to act as centres of initiative in society, the places where new ideas emerge in society. Therefore I think it is necessary to pay particular attention to ensuring that in ageing

university faculties and so on there is an adequte up-thrust from below, inside the universities themselves. Indeed, I would hope that there will be sufficient sensitivity within the University Grants Committee to the development of these Centres of initiative during the course of the next few years, because certainly learning does not stop because of financial problems.

Thirdly, I think it is necessary to pay much closer attention to the relationship between universities and schools. I have said very little about this. But it is no longer possible to take for granted, in Britain at any rate, that there is going to be an automatic intake into the universities from schools. There are many signs in schools that a larger proportion of the age-group is not wanting to go to university at all, as compared with the past. If that were to happen it would, of course, be one way of dealing with some of the problems of cutting the numbers, which the Government itself thinks is important. But suppose the people were to be concentrated in the lower income-groups of society where there is not very much knowledge of the full range of educational opportunity even now ? We would, I think, by moving towards a serious social gap in our society which would have very disastrous long-term consequences. Therefore we do spend a great deal more time in universities on bringing in headmasters, headmistresses, VIth Form masters in schools, to talk to them about our mutual problems and about the opportunities which are available inside universities, and how we could really establish closer relationships between each other.

Fourthly, I think we have got to get some answers to all these vast problems which are there of life-long education. The Open University has proven that adults in large numbers *do* want to continue their education, to have a second chance if they have not had the first chance (even if they *have* had the first chance, to continue on the basis of what they have already learnt) ; it has proven that they are very highly-motivated people who want to do this and that they are prepared, in fact, to put up with all kinds of difficulties in order to do so.

I believe that these pressures for life-long education are going to increase. I believe that in the long run the university will become a Multi-aid institution, both as far as its students are concerned and as far as its Faculty is concerned. One of the effects of the changes that I have mentioned is that there are far more older people going to universities now—not just the Open University, but going to all universities, than was the case a few years ago. In some universities now the percentage of people going to university who are over the age of 25 is over 25%. This change in the composition of universities seems, to me, to be a portent in some respects for the future.

However, if more money is going to be spent nationally on continuing education, then so long as the concept of the "package" or "limited package" is there, that development is going to have to take place at the expense of something else. What is going to take the place of is the crucial question.

I come now to my very last point, a matter of some concern to all those of us who are interested in higher education in England : What is the public demand for higher education in our society ? And how does the demand

for higher education relate to the demand for other things, like health, or housing ?

This is a fundamental question in relation to the future. It seems to me that nearly all the complex problems which we have to deal with in our own societies are problems that do require *more* education rather than less : Education not only of an expert kind, to guide people who will be dealing with and trying to work out answers to problems—but education which will enable people who are themselves involved in the programmes to be able to appreciate what the opportunities of the programmes really are. I think it is only going to be by showing the relevance of the educational dimension to other forms of national policy that we will be able to find adequate resources to develop the higher educational system of the country along the way which I believe to be necessary.

The point is that with all the difficulties and problems, higher education is extremely important. It used to be very fashionable to talk about all this in terms of races and in terms of comparisons between one place and another. Those comparisons are not very fashionable in the present time. It used to be very fashionable to talk of higher education entirely in terms of a National Investment : that is not very popular talk now. What we have got to do now, I think, is to find talk which will show that unless we *do* get the higher educational scene right, a lot of other scenes in society will certainly be wrong.

DIRECTORY OF SCIENTIFIC RESEARCH IN INDIAN UNIVERSITIES, 1974

Published by the University Grants Commission

Containing information on:

9,930 Research Projects carried out by 66,333 Scientists on Physical Sciences, Bio-Sciences, Engineering, Agriculture, Management, Transport, Chemical Technology and Architecture; pp. 662.

Price Rs. 35; £4 (UK); $15 (USA)

Available on Sale with

(1) *Assistant Educational Adviser (P), Ministry of Education and Culture Publication Unit A.F.O. Hutments, Dr. Rajendraprasad Road, New Delhi*-110001

(2) *Manager of Publications, Government of India, Publication Branch, Civil Lines, Delhi*-110054 *and his authorised agents.*

Trade Enquiries Solicited

While ordering copies, please quote Symbol No. PUGC. 36 (N)

Journal of Higher Education
Vol. 9 No. 1 Monsoon 1983

The University as an Institution: Present Problems and Future Trends*

DIETRICH GOLDSCHMIDT

In speacking about "the University as an Institution" at this International Congress we must be concerned first of all with those features which can be found in almost all university systems. Indeed, despite important variations, national university systems show many similarities that cross international borders. International relations in science and scholarship, as in other areas of public life, are becoming increasingly interwoven. The development of mass higher education in the past 35 years underlines also the uniqueness of each national university system within "its" own society and in its relation with "its" particular government. Nevertheless, science is predominantly international, and the general expansion and increasingly pragmatic orientation of post-secondary education is an international trend.

My theses shall be confined primarily to what seem to be general trends in the development of almost all national systems. For this reason and because of the limitations of space, I shall abstain from any attempt at systematic institutional analysis of each of the innumerable systems. However, I may refer to specific national developments in order to present a clear picture of the particular framework in which each individual system has to operate.[1]

The modern university—a universal institution developed in Europe and the USA—serves nowadays as the main part of tertiary education in almost all countries of the world. UNESCO statistics show that student enrolments which exploded from the early sixties to the mid seventies are still growing—though somewhat slower—in many countries of the world, although the optimistic belief of the sixties in educational expansion as a tool for economic and social development has disappeared or is disappearing in most

*Spotlight at the Congress "Higher Education by the Year 2000" Frankfurt, 7th September 1983.

countries. Enrolments will probably grow further until the end of the century, particularly in countries of the southern hemisphere, especially those with expanding populations (cf. appendix).[2]

The continuing growth of many national systems shows that even in poor countries many governments are giving priority to social demand for higher education and are hesitating to limit admission of students to the universities according to manpower needs. In fact, contrary to the scepticism of experts[3] with regard to the adequate degree of expansion desirable for economic and social development and the appropriate curricula, university education as it has developed under Western influence is still considered to serve best the social and economic promotion of the individual. To this extent governments are also acting under pressure from influential parts of the public, whereas in many countries little regard is given to the actual need for academically trained personnel and to the need for corresponding curricula.

National university systems have grown in two ways :

—by enlarging many old universities ;
—by founding new universities.

In most cases universities of either type have grown to such an extent that they have lost their character as closed academic communities of masters and students bound together by fairly common academic life and ideals as well as by common methods of learning and research. Universities have developed into multiversities. (cf. Clark Kerr : *The Uses of the University*. Harvard University Press, Cambridge/Mass. 1964).

Mass education and growing specialization have in many cases led to structural change in two directions within the multiversity : firstly, decentralization of the functional units such as Departments, Colleges, Schools, Research Institutes; and secondly, the growth of an all-embracing central administration along bureaucratic lines.

Nevertheless, to improve the quality not only of the education offered, but also of academic communication, social life, and even administration, one should aim to stop any further growth in the individual units as well as in the all-embracing administrative machineries. (It may be noticed that in Great Britain, where growth at least until now has occurred partly through the establishment of new universities rather than expansion of the existing institutions, decision-making continues to be relatively informal and the expansion of academic administration has been held in check).

However, in view of the political weight and the financial burden of the universities as mass institutions, governments show an increasing tendency to make universities accountable to the public and to strengthen central control of finances for teaching and research, of personnel appointments and of curricula.

The extremely rapid growth of post-secondary education has led to a continuing shift in the relationships between the various governing units.

—within the university systems, that is to say, between levels such as chair/institute/department ; faculty/school/college ; single campus university ; multicampus cluster and
—at higher levels like state and national government.

These relations determine the extent to which the universities on their different levels can exercise institutional autonomy. These relations also determine the degree to which government and society can supervise them while planning their development and stimulating innovation. This question, which is linked to that of academic freedom in teaching (incl. planning of curricula) and research, has been one of the central themes in university history. It will become still more important in future.

In principle, teaching and research are obviously stifled when rigidly controlled, but they also suffer when they are entirely free from any social accountability. Faculty members and boards in making decisions on their academic work need a vis-a-vis, a partner to whom they are accountable. This partner may be a state authority, their own university administration, or a foundation—any body to which they must periodically demonstrate the scientific and social relevance of their research and their teaching, particularly as the latter has a bearing on occupational education. This in turn grants them the necessary autonomy and resources while mediating social demands.

The lack of such accountability is particularly evident in Italy. The other extreme of political and bureaucratic control occurs not only in socialist countries and many developing countries but also in a Western country like Sweden : this extreme endangers scientific and scholarly progress through undue restrictions on teaching and on research freedom.

The more modern universities become institutions for mass education and at the same time the modern arts and sciences become more and more sophisticated and specialised, the less it is feasible to aim at the unity of teaching and research as proclaimed by Wilhelm von Humboldt, founder of the University of Berlin, and his contemporaries in 1810. This idea continues to be preached today. However, in most countries education of undergraduates is separate from research and training for research. This tendency will become even stronger the more mass education spreads. Research and training for research have specialized in almost all disciplines.

By organizing graduate and professional schools separately from colleges, the American universities have developed a remarkable way of coping with these two distinct tasks of the university. This is true despite the fact that on the one hand many colleges do not provide research facilities and that on the other many research organizations and institutes are not at all or only losely linked with universities. In other countries much research and training for research are tasks of separate institutions, like the Centre National de Recherche Scientifique (CNRS) in France or the academies of sciences in socialist countries.

From the mid-sixties to the early seventies the universities of the so-called first world—from Western Europe to the USA and further to Japan—have been shaken by the student revolution: Democratization was to be accomplished by dissolving traditional hierarchical structures of decision-making, mainly in the hands of senior professors ("Ordinarii"). Representatives of all groups involved—senior and junior faculty, clerical staff, students as well as—in some countries—trade associations and trade unions—were thought to reform the universities organizationally and to develop new curricula. At the end the universities were to become nuclei of general social and political reform. Most of these attempts failed, high flying ideas remained dreams. What is lasting are some new structures for internal decision-making, giving a little more weight to junior faculty and to students as far as they would still show interest in university affairs. Concepts for new curricula accentuating social and political concerns in many disciplines boiled down to some modest attempts to adapt teaching methods to the new situation of mass instead of elite education. Other developments since World War II—universal expansion of higher education, growth into systems of mass education disintegration into multiversities, increasing split between teaching and research, and diversification of the individual institutions in the realm of tertiary education, last but not least the bureaucratization and the growing state influence—have changed the universities far more than the student revolution. However, the admission of millions of students to higher education represents a major feature of democratization in most industrialized countries—leaving us with the questions of the students revolution about aims, methods and quality of mass higher education not yet solved satisfactorily.

In general, government and university policies all over the world with respect to the education of undergraduates have three tendencies in common :

The abondonment of "liberal education", or of education in the traditional humanistic sense of "Bildung". This tendency can be observed all over the world (even in England or in the USA, except perhaps at some prestigious, usually old colleges), despite lip service to the contrary at solemn assemblies.

Control of the political activities of students and faculty, in many countries combined with political education as a kind of replacement of traditional general education—be it in the sense of teaching theoretical concepts, or in a more pragmatic sense of studies on current political, economic, social etc. affairs.

Concentration on professional education and the structuring of programs with rigid course requirements more and more similar structurally to those in secondary schools.

As an outcome of the concentration on the occupational education of millions of students the relationship between education and occupation has become the key problem of university education. This emphasis prevails

in rich and poor, in capitalist and socialist countries, at present and probably for the decades to come. Curriculum planning and the selection of relevant content and methods of teaching have acquired an importance never known before. The problem has many aspects. I should like to enumerate five of them :

(a) There is first of all the quantitative problem of the appropriate distribution of students in the different subjects, i.e. the proportion of students pursuing education in the humanities, the social sciences, the natural sciences, or technology. Only in recent times many so-called developing countries have built up, quite rightly, natural sciences, technology and medicine at their universities in order to meet their urgent needs in the related vocational fields. Nevertheless, in general one must be concerned in all countries of the world that the humanities and the social sciences do not lose their impact on coming generations of students. Changes in quantitative distribution are leading to qualitative changes as well ! Only by preserving as much of the history and culture of the specific countries as possible will it be feasible for each country to establish a delicate balance between universal cultural traits and its particular cultural tradition and significance.

(b) There is also a further qualitative problem with regard to the curricula for the different subjects. Traditional general education is out, but the task ahead of us is to develop curricula which would enable students while specializing in subjects relevant to their future occupation to become acquainted also with intellectual, social and cultural elements, their importance and their impact on society in general; i.e., to gain some new kind of general education by thorough analysis of their special field of interest and clarification of specific social responsibilities in these fields.

(c) The next problem is linked with the foregoing one. As university education increasingly becomes occupational training, it is important to include periods of practical vocational training and to reflect the students' practcal experience in further university courses. Practical work on the other hand should not be learned without reflections about its general social, economic and cultural implications and obligations ; however, theory should by no means be confined to considerations of vocational practice.

(d) With the advent of mass education an aspect which was once a matter of course has gained particular emphasis : As far as possible teaching should always imply some "research" tasks for the students —no matter if these tasks have been solved already, or if they are really new. Students must learn to solve problems and should not be encouraged to rely on rote learning only.

(e) Mass education poses one more particular problem : The arts and sciences rely on international communication and exchange ;

general international communication has become more intense than ever before ; the welfare of mankind in the year 2000 and beyond has become a common concern all over the world. Nevertheless, many of the "new" students come from modest or very traditional social backgrounds and have grown up with limited or very different perspectives and expectations. The students' narrow occupational orientation and the resulting low popularity of "unnecessary subjects" support the tendency of economizing administrations not to include courses with international orientation, particularly foreign languages, in the curriculum or to limit opportunities for optional participation. The growing interdependence of nations requires us to pay more attention to foreign languages and cultures, to international exchange of teachers and students, and not less.

The more university education looses its elite character derived from the European and American traditions and the more it is oriented towards the goals of occupational training, the more the university as an institution becomes an integrated part of post-secondary or tertiary education in general. Its criteria for admission become more flexible by acknowledging appropriate qualifications ; the borderline to other colleges, to polytechnics etc. becomes more permeable (cf. USA, France) ; some countries (FRG, Sweden et al.) experiment with "comprehensive universities" etc. In general : With their enlargement and their growing interdependence with national social systems, universities are more closely integrated into national educational systems than ever before. Therefore, the device—applied e.g. in Unesco statistics—of distinguishing between institutions of university and of non-university type is only of limited value ; it cannot properly account for the uniqueness of each national system and the academic standards of its institutions. However, the growing diversification of institutions does not prevent the development of rather sophisticated hierarchical structures and corresponding prestige scales in most, if not all countries.

As the impact of political, economic and social accountability and the pressure towards occupational education grow, old and new universities instensify activities devoted to the immediate educational and research needs of their respective regions. Old traditions of applied scientific work—land grant colleges in the USA, technical universities in Germany—are gaining particular weight in industrialized countries, but are still far stronger in so-called developing countries.

As a result of such activities new educational reserves will open up. Close ties, for instance, between teaching-and-research centres and local or regional business and administrations can stimulate economic activities. The establishment of new medical training centres improves medical care. In developing areas technical colleges combined with their own production plants and workshops ("productive schools") can improve the quality

of technical training, of manufacturing processes and of business management. Regionalization in general represents a step towards democracy in the sense of improved educational opportunities for all; and the wider distribution of educational institutions assists indirectly in restraining the growth of large conurbations.

In the USA one of the traditional roles of some colleges and universities is their direct participation in the solution of the social and economic problems and educational tasks facing the individual towns and states to which they belong ("urban involvement"). In several European countries (France, Italy, Sweden) very recent reforms have explicitly included decentralization and the stimulation of local initiatives among their objectives. These developments could be important in developing countries as well. How far they will proceed in industrialized countries remains to be seen.[4]

A further outcome of the stronger linkage between the universities and their social environment on the one hand and of the growing demand for ever higher education on the other is the provision for further or continuing education at the universities. Universities have started to participate in what is called adult education. In a world of more and more rapid technological, economic and social change continuing education in technical, economic and social fields is becoming more and more important also for people who have gained vocational experience already. Furthermore, due to demographic reasons the age structure of the student body as a whole may well have changed by the year 2000. Older age groups may be more strongly represented in many countries than they are today. As a result, the process of teaching and learning will take on a new shape : In many courses a growing number of participants will be motivated by their professional experience and will contribute from it. For many of these students, perhaps more than for others, questions about the relevance of their occupations and about their position within societal development will become vivid and pressing questions.

Experiments like "university without walls" in the USA ; recent developments in the decentralization of higher education in Sweden ; the success of the Open University in Great Britain ; the equally impressive work of the University of South Africa (UNISA) in Pretoria with its telecommunication and library service ; and, on the other hand, the teaching of evening and correspondence clases in the USSR : all of these schemes are worth careful observation in view of the tasks ahead of all university systems by the year 2000.

In most countries research and training for research were traditionally integrated in, or at least organizationally bound to, colleges and universities. As they are becoming more and more separate tasks they may require special organizational provisions or even more independent institutions than can be found today. However, I should like to stress function and effect of research within higher education. Furthermore, we have to ask what guidelines for practical action arise from a society's policy towards scientific research, its aims and objectives.

Research provides stimulus for and is in turn stimulated by teaching ; it services pre-eminently the training of future researchers. It is even more important that time and again distinguished scholars, attached to graduate schools or research centres, make it their obligation to teach undergraduates introductory courses of their subject. They should let the students share their specific and their broader professional experience.

Evident disadvantages of academic research within a traditional university setting stem from the fact that the intensity of the research is often considerably lessened by the scholars' occupation with teaching duties and faculty self-government. However, it should not be overlooked that the organizational and personal connection of reserach with teaching can easily turn to the detriment of teaching, since, unfortunately, research is generally considered more attractive and gratifying. It offers the scholars better career opportunities !

The substantial problems of science policy lie simultaneously in determining research priorities and in deciding official competency for the areas of organization, funds and personnel. Those who determine priorities must above all resolve rival claims when distributing resources, for instance, between.

—the humanities, natural and social sciences, e.g. space and space flight research as opposed to research into urban renewal ;
—pure vs. applied research ;
—research in only single disciplines vs. problem oriented multi—or interdisciplinary research ;
—research concentrating on national problems of immediate interest on the one hand, and on the other hand research on urgent international problems which are not everywhere immediately relevant nationally and which may also not be soluble on the national level, such as
—research on such global problems as the world's available resources (energy, raw materials) and their management, environmental protection, basic human needs, population expansion, redistribution of wealth among nations, peace ;
—research dealing with specific problems of developing countries.

The more important given problems are, and the more costly the research is, all the more will the priorities be decided on levels above those of individual institutions of higher education. The key decisions whether concerning large national research programmes such as atomic research, and space research, or concerning the total budget of universities (private colleges and institutions in the USA and Japan are the exception), are in any case made by the governments involved. Yet, in many places research on smaller scale by colleges and universities, precisely in connection with teaching and supported by relatively stable budgeting, has at its disposal the necessary degree of basic apparatus without having to rely on special

projects, and thus enjoys a relative independence in comparison to many governmental and private institutions which work by contract. Tradition permits university research to keep research areas going which would probably be rationalized away if they were to be shifted to other research institutes. Its relative independence helps to assure adequate pure research in the academic disciplines, incl. humanities which otherwise are easily neglected.

A more fundamental consideration may be devoted to the fact that inter-disciplinary and problem-oriented research has so far been developed as university research in relatively few institutes and with various degrees of success. Its necessity is ever and again clearly apparent in many burning problems—one has only to think of the above-mentioned global problems—and in the correspondng educational needs. But universities are known for their overrigid adherence to long established academic disciplines, for their lack of practical relevance in many subjects, and especially for their failure to combine the solutions of the natural and technical sciences with those of the social sciences, when dealing with problems which concern them both ! So far, problem oriented research has been brought closer to a solution by institutes and task forces established for specific problems rather than by academic institutions.

The universities respond to this criticism by pointing to difficulties that can only be solved on a case by case basis :

—the maintenance of methodological standards appropriate to each discipline.
—the development of co-ordinated and agreed methods which are appropriate to an inter-disciplinary approach to the object under consideration.
—the organization of institutes which do not contravene or disrupt the overall organization of the university.
—the consideration of the personal career interests of the researchers.
—the cost of such research.

However, the conservative trend to be observed in the educational and research policy of many countries at present causes extreme concern. To find the appropriate balance between disciplinary and problem oriented research and education is one of the most urgent tasks which the systems of higher education have to face on their way towards the year 2000.

Some final remarks about my perception of university development may be in place. My treatment of present problems and future trends of the university as an institution may sound fairly cautious, conforming to the situation and to the development as they are to be found at most places. However, my task here was careful observation, an institutional analysis but not the development of new concepts or theories for the work of universities. In addition, this approach meets my own view of the general situation : Universities no longer even make a pretence of being what was

expected of them since the time of Enlightenment : that by their work in research and teaching they would pursue truth, an endeavour which in itself would have an educative effect and would foster progress of mankind. As I said before : neither "liberal education" nor "Bildung" nor political activities are dominant goals today but rational intellectual training, vocational preparation and value-free research. More demanding and even nonconformist challenges are not ruled out ; on the contrary : where they are brought forward they are in many countries welcome as an additional contribution. The universities are expected to provide adequate platforms for initiatives of this kind ; in their service to society they should also be safeguards of intellectual freedom and social criticism. To this extent they are felt to perpetuate their Enlightenment tradition. But they cannot do much more. As a mass institution depending on public funds probably no university can in its general planning be geared for much more than intellectual, yet particularistic exercises in teaching and research. More far-reaching considerations, the call to make humane use of science, the concern that science be developed as a productive force for human society and not as a destructive one, the search for universal reason, for peace and justice are challenges to be met first and foremost by committed teachers and students themselves. As an institution, the university is not a moral foundation or a church, nor can it replace such institutions. Above all it is the task of teachers and students alike to strike the balance between their functional service to society, particularly in their professional performance, and their moral obligation that derives from striving for universal reason.

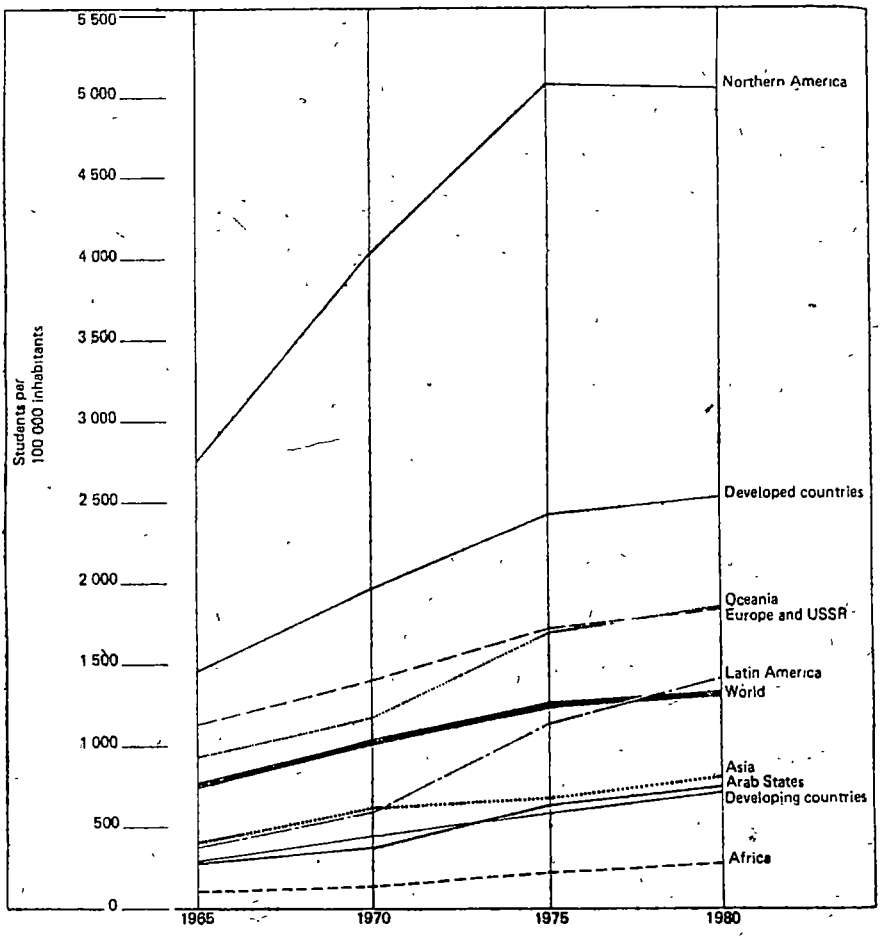
References

1. Cf : D. Goldschmidt: Power and Decision Making in Higher Education (on patterns of authority in seven national systems). *Comparative Education Review* 22 (1978, pp. 212–241
2. Cf : U. Teichler : Hochschulexpansion—Ursachen, Entwicklungstendenzen, Auswirkungen. In : Z.f. Sozialisations—forschung und Erziehungssoziologie, Jg. 1, H. 2, Sept. 1981, pp. 159–172 ; D. Goldschmidt : Tendenzen der internationalen Hochschulentwicklung, *Ibid.*, pp. 173–186– *UNESCO : Statistical Yearbook* 1982, Paris 1982, pp. III-10, III-281 ff.
3. J. Coleman, ed : *Education and Political Development.* Princeton, N.Y. 1965, pp. 3–50. Th. Hanf et al. : Education : An Obstacle to Development ?, *Comparative Education Review* 19 (1975), pp. 68–87.
4. Cf. e.g. : G. Nash et al. : *The University and the City, eight cases of involvement.* New York 1983. P. Kellermann, ed. : Universitat und Umland, Beziehungen zwischen Hochschule und Region. Klagenfurt 1982. Cf. also papers by the European Institute of Education and Social Policy, Paris, and other international institutions.

Appendix

Number of Students at Tertiary Education

(Not including China and the D.P.R. Korea)



Source: UNESCO: Statistical Yearbook 1982, Paris 1982, p. III–10.

CSIR SCIENTIFIC PERIODICALS

JOURNAL OF SCIENTIFIC AND INDUSTRIAL RESEARCH (monthly)
With a fine record of over 40 years' service to the scientific community, this journal has grown into India's leading general science periodical. Intended to fulfil the responsibility of helping the research workers to keep themselves abreast of current developments in various fields of science and technology.

Annual			
subscription	Rs. 100.00	£ 17.00	$ 138.00
Single copy	10.00	1.70	3.80

INDIAN JOURNAL OF CHEMISTRY
Section A : In the 20th year of publication, the journal is devoted to papers in Inorganic, Physical, Theoretical and Analytical Chemistry. (monthly)

Annual			
subscription	Rs. 125.00	£21.00	$47.00
Single copy	12.50	2.10	4.70

Section B : In the 18th year of publication, the journal is devoted to papers in Organic Chemistry including Medicinal Chemistry.

Annual			
subscription	Rs. 125.00	£21.00	$47.00
Single copy	12.50	2.10	4.70

INDIAN JOURNAL OF RADIO & SPACE PHYSICS (bimonthly)
The journal, which is being published beginning from march 1972, is intended to serve as a medium for the publication of the growing research output in various areas of radio and space physics.

Annual			
subscription	Rs 90.00	£ 15.00	$34.00
Single copy	18.00	3.00	6.80

INDIAN JOURNAL OF TECHNOLOGY (INCLUDING ENGINEERING) (monthly)
This journal publishes papers reporting results of original research of applied nature pertaining to unit operations, heat and mass transfer, products, processes, instruments and appliances, etc. The journal is of special interest to research workers in the departments of applied sciences.

Annual			
subscription	Rs. 90.00	£ 15.00	$34.00
Single copy	9.00	1.50	3.40

INDIAN JOURNAL OF EXPERIMENTAL BIOLOGY (monthly)
This journal, devoted to the publication of research communications in the fields of experimental botany, zoology, microbiology, pharmacology, endocrinology, nutrition, etc. a wide coverage and scope.

Annual			
subscription	Rs 180.00	£30.00	$68.00
Single copy	18.00	3.00	6.80

INDIAN JOURNAL OF BIOCHEMISTRY & BIOPHYSICS (bimonthly)
This journal, published in association with the Society of Biological Chemists (India) Bangalore, is the only research journal in India devoted exclusively to original research communications in biochemistry and biophysics.

Annual			
subscription	Rs. 60.00	£ 10.00	$23.00
Single copy	12.00	2.00	4.60

INDIAN JOURNAL OF MARINE SCIENCES (quarterly)
Commencing publication from June 1972, this journal is devoted to research communications (full papers and short communications) pertaining to various facets of marine research.

Annual			
subscription	Rs. 75.00	£ 13.00	$28.00
Single copy	22.00	4.00	8.40

RESEARCH AND INDUSTRY (quarterly)
Intended to serve as a link between science and industry, this journal is addressed primarily to technologists, engineers, executives and others in industry and trade.

Annual			
subscription	Rs. 45 00	£ 8.00	$17.00
Single copy	13.00	2.50	5.00

INDIAN JOURNAL OF PURE & APPLIED PHYSICS (monthly)
This journal, which is running 20th year of its publication, is devoted to original research communications in all conventional branches of physics (except radio and space physics).

Annual			
subscription	Rs. 120.00	£ 20.00	$45.00
Single copy	12.00	2.00	4.50

Please Contact : **The Sales and Distribution Officer**
PUBLICATION AND INFORMATION DIRECTORATE, CSIR
Hillside Road, New Delhi 110013

Journal of Higher Education
Vol. 9 No. 1 Monsoon 1983

Notes from Research

SOCIAL COSTS OF RESERVATION IN HIGHER EDUCATION : A DECISION THEORETIC VIEW

Policies and practices in general, with regard to reservation as applied to scheduled castes and scheduled tribes can be conceptualised to cover three broad, but distinct areas :

(1) Safeguarding of political rights.
(2) Ensuring a fair share of employment opportunities.
(3) Enhancing opportunities for higher technical, scientific and professional education.

The avowed intentions and motivations of the founding fathers of our Constitution, while they were making legal provisions pertaining to reservations for the weaker sections of the community, like scheduled castes, scheduled tribes, and special minority groups, are not difficult to reconstruct. A quick perusal of the basic ingredients of the constitutional safeguards will make them clear :

(a) Protection of the weaker sections from exploitation.
(b) Guaranteeing rights to equality.
(c) Progressive abolition of disparities of various types (such as untouchability).
(d) Fostering of promotional, nurturant and protectionist functions of the government for helping weaker sections of the community (such as reservation of jobs).
(e) Categorical reservation of *political* rights, by providing reserved constituencies, for returning representatives to legislatures, at the Centre and at state levels. (Originally this was provided for ten years, but the period has subsequently been extended).

It has been pointed out that while reservation has been categorically laid down in the economic sphere, and political sphere, such has not been the case in the educational sphere. Providing for equality of opportunity for receiving education at least at the primary level, appears to have been accepted. However, the states were free (according to Article 15(4) in Part III of the Constitution to make special provisions for scheduled castes and scheduled tribes.

We may posit that a liberal, democratic, egalitarian, and humanist type of motivation, with commitment to social justice, dominated the constitution makers, while they were engaged in prescribing legal provisions for the scheduled castes and scheduled tribes. A certain extent of margin was allowed to the states for supplementing the basic provisions, in operational terms.

In recent times there has been a spurt of writing on the implications of the reservation policy. The constant refrain for most writings on reservation policies is a reaffirmation of faith in the wisdom of the founding fathers of the Constitution, for making legal provisions in the field of reservation. There is generally a reiteration of the argument that one of the major justifications for reservation rests on the need of undoing the injustice and exploitation to which the members of the scheduled castes and scheduled tribes have been subjected over centuries.

This writer has no intention of challenging or questioning the arguments which assume an impassioned and moral posture, even while it is not difficult to see certain basic weaknesses in the logic of such arguments.

It was perhaps beyond the founding fathers of the Constitution to foresee far ahead into the future course of history, with any degree of accuracy. The sophisticated calculus for predicting the sorts of outcomes that would necessarily follow, over a long period of time due to the implementation of reservation policies, was simply not available to our Constitution makers. Most writers show a lack of awareness of this fact. On the contrary, there is a singular absence of critical assessment of certain major parameters of the constitutional provisions in the sphere of reservation. This could be done on four major counts.

First, the need for building in some sort of flexibility and self-correction into the system, of measures formulated originally, as they reacted with the unfolding processes of historical reality, was neither fully appreciated or carefully articulated.

Secondly, there was a blanket lumping together under the protective umbrella of reservation three disparate areas, viz., political rights, rights to employment, and educational opportunities. That the impact of reservation is unique for each area was hardly spelled out explicitly. There is the basic requirement of considering 'social costs' and social benefits' of decisions from laws related to the three separate areas of reservation. These are likely to differ from one area to another. The social costs and benefits related to reservation of quota for jobs are not necessarily commensurate with the same, when it is extended to reservation of quota for seats in institutions of higher, technical and scientific education. Put in modern social science language, the deeper implications of cost-benefit analysis, in terms of the community which is sought to be made the preferred beneficiary, i.e., the scheduled castes and scheduled tribes, and the entire society, of decisions flowing from implementing reservation laws into the field of higher education, have yet to be gone into.

Thirdly, there was scarcely any attempt to distinguish between long term and short term goals, and measures to achieve the same. There was hardly any recognition of the wisdom that really good decisions are *sequential* in nature, subjected to self correction through built-in monitoring devices. It is true that Dr. B.R. Ambedkar, acknowledged as the chief architect of the edifice that the Indian Constitution undoubtedly is, had apprehended that prolonged reservation would damage the interest of the scheduled caste members in the long run. Short term privileges can work as crutches for rehabilitation, to be discarded when normalcy is restored. But long term dependance on crutches only tends to perpetuate infirmity and weakness. This is a danger before the weaker sections of the community. This is apt to be lost sight of, because the danger is not immediate, while the advantages are visible and immediate.

Fourthly, there has been neglect of the psychological angle. The enjoyment of privilege by one section of the community, produces animosity and jealousy among those who are denied the same privileges. This increases the psychological distance between two sections of the community, which is certainly an unwanted outcome of the entire social planning process. How much effort has been spent to educate the community, so that all

realise that the privileges bestowed upon one section are not undeserved gifts, but much needed assistance to eradicate age long disparities, which hold back the entire nation ?

Reservation in the Field of Higher Education

It has been pointed out earlier that the deeper social implications and impacts of the policy of reservation in the field of higher education, specially technical, scientific and professional education, are qualitatively different from those in the field of job reservation and providing separate electoral constituencies. Politicians, administrators, bureaucrats and social planners have either played down their significance deliberately or glossed over them, when not ignoring them. But developments like the agitation launched by the medicos in Gujarat have underlined the fact that those who are directly affected by the reservation provisions think very differently indeed. The whole matter of reservation of seats in the sphere of higher education has assumed considerable importance and has generated a good deal of controversy.

Even within the sphere of higher education, the provisions for reservation vary from state to state, from institution to institution, from subject to subject, and even from one client community to another. No useful purpose may be served by trying to list these provisions. A more useful purpose may be served by giving a summary of such provisions :

(a) One type of reservation ear-marks a certain proportion of available seats for members of scheduled castes and scheduled tribes, for different types of courses, such as engineering, medicine, science, law etc.
(b) In certain cases, there is a provision of 'interchange' between scheduled castes and scheduled tribes, if the number of applicants in one community is smaller than number of seats ear-marked for it, the balance being offered to the other community.
(c) Again, there may be provision for 'carrying over', of the reserved quota, from one year to the next, if the full quota is not filled up in any year.
(d) The minimum level of marks required for qualifying, or admission to special courses may be lowered for Adivasis and Harijans.
(e) There may be provision of financial assistance, and scholarships specially ear-marked for Adivasis and Harijans. The qualifying standards may be liberalise for applicants of these communities.
(f) The maximum age level for enrolment in certain courses may be raised for Harijans and Adivasis.
(g) The minimum level of marks required to be earned for being declared successful in examinations may be lowered for these two communities ; this will also apply for promotion from one class to the next higher class.
(h) Diverse types of pecuniary concessions may be granted to communities belonging to scheduled castes and scheduled tribes in the sphere of higher education : for example, the cost of admission or application forms, or examination fees may be lower compared to the same for general candidates.

A preferentially protective character is the thread common through these diverse measures for helping members of the disadvantaged communities seeking higher education. And that is consistent with the major motivation of the constitution makers, so far as their immediate, and short-term character is concerned. However, when their delayed, distal, long term aspects are taken into careful consideration, we note that certain complications arise, indicating serious lacuna in the chain of reasoning, in the bunch of reservations pertaining to the domain of higher education.

When a nation ordains that every child has his right to receive free primary education, or that every individual must have guaranteed employment opportunities, the major concern is the short-term needs of the individual *qua* individual, transcending his inherent strengths or weaknesses, flowing from such incidental facts like nativity, caste, location,

religion, etc. However, when it comes to opportunity for higher technical, scientific and professional education, there is an important component of social investment involved in it. The state provides costly resources for institutionalising such type of education, not merely because some individuals desire to have such education and training, but also because the state is in need of certain types of specialised *services* from qualified persons, called professionals and experts. The state is ready and willing to make available valuable resources in order that a ready supply of professional experts and specialists, possessing a certain minimum level of skill and competence is available to form a pool, and the community is assured of receiving services of a minimum guaranteed quality from this pool.

There may be a very small number of learners who want higher education for its own sake—something like "Arts for art's sake"—they are not thinking in terms of selling their services, as experts, specialists or professionals, after they have achieved a high level of proficiency and competence in branches of knowledge chosen by themselves. But this small section apart, the majority of aspirants for higher education desire to enter a profession, where they expect to receive a handsome price for the high quality service sold by them to the community : they have gained the expertise through hard, costly, arduous, and demanding training.

It is clear that the entire technology of higher, sophisticated scientific and professional education, in contrast to general education for the masses, bears a similarity to productive enterprises to which method of economic analysis can be applied. It means that it is legitimate to apply methods like input-output analysis, cost-benefit analysis, or decision theoretic analysis, to evaluate the economic viability or 'worthwhileness' of this type of enterprise. Society is investing its scarce resources into the domain of higher technical, scientific and professional education. That is the *cost* or *input* side of the investment. The amount and quality of 'service' received back from the trained professional, specialists and experts, is the *output* or *return* side of the economic enterprise. A cost-benefit type of analysis, or more appropriately, a decision theoretic type of analysis is logically tenable in the domain of higher technical, scientific and professional education, specially as it applied to the measures of protection and preferential treatment offered to scheduled caste and scheduled tribe applicants for higher education. The community will like to now how the magnitude of the return is affected by the implementation of the reservation policies in the field of higher education. Such an analysis is called for, because the community has the right to demand a reasonable return from the investment made by it in a particular enterprise. For the type of services the community is ready to purchase from the experts, specialists and professionals, their quality, their level of sophistication, their excellence in terms freedom from errors of judgment, asume supreme importance. For receiving professional, and technical services, the community makes payments twice : one, indirectly, while setting up, and maintaining institutions of higher and professional learning and meeting the costs, generally a part of it, of training of the future experts and specialists ; and again, a second time, when paying the fees of the lawyer, engineer, doctor, etc. If these services are nationalised, then community pays taxes for maintaining the institutions where services can be obtained for nominal or token payments. In such transactions, which in essence is commercial in nature, between two parties, the community on one hand, and the professional experts and specialists on the other, the rights of the buyers and of the sellers are both inalienable. The buyer's insistence on a minimum quality or level of the service he purchases is inherent in this right.

Decision Theoretic Analysis of Selection Policies

The arguments that have been put forward so far are straight forward and simple. However, when the implications of reservation policies in the field of higher education are probed a little deeper reaching to their operational outcomes, we see that there are certain complexities which are related to the quality of decisions that follow implementation of the policies. It is common place knowledge that whenever a situation calls for allocation of scarce resources under alternative and competing heads, the return from the

investment is a function of the quality of the decisions made. Decision theory in the science of analysing the quality of decisions, specially when probabilities can be assigned to decisions leading to different outcomes.

Two terms, 'decision' and 'strategy' should be defined here, as these are used rather loosely in day to day parlance. 'Decision' is the process of selecting one out of a set of possible alternatives that will satisfy some criterion of attaining a desired goal. A 'strategy' is a *rule of behaviour,* covering all possible eventualities, following the implementation of decisions. A strategy is always defined beforehand, before making the decisions. Further, most social situations representing conflicting interests generally have a number of alternative modes of action for attaining the goals of the contending parties. Each of the alternative courses of actions, constituting the 'solution set', is associated with specific pay-offs, variously called rewards, benefits, or reinforcements. Instead of certainty, if there is a certain probability associated with the pay-off, then the appropriate term is 'utility'. It turns out that for a given situation, the different alternative situations can be evaluated, or ordered or ranked, in terms of the pay-off or utility accruing to it. This provides a calculus for assessing the quality of decisons, referred to earlier. Lastly, in many situations of conflicting interests the pay-off structure, i.e., the combination of pay-offs attached to the different alternatives, may be such that they point to certain strategies, which will be optimum for all the contending parties in the conflict. Von Neumann's famed 'minimax' principle is an example of such an optimal strategy. Pareto's 'welfare function' is another example of a search for an optimal strategy, in the field of economics dealing with allocation of scarce resources under different competing heads, where, in addition to considerations of return from the investment, social welfare and social justice needs are also sought to be fulfilled.

During the last two decades decision theory has been sought to be applied in the field of personnel selection, placement and training, the pioneering work for which has been done by psychometricians like Hubert Brogden (1946), Robert Thorndike (1949-1950) and Lee Cronbach (1957). The foundation of the theory of selection, placement and training, has been provided by the developments in aptitude testing by psychometricians and specialists in tests and measurements.

Following Cronbach (1970), we may say that a 'proficiency' test measures ability to perform some task significant in its own rights. Again, in 'aptitude' test is one intended to predict success in some occupation or training course, like engineering, music, mathematics, medicine, driving a locomotive engine, or flying a commercial aeroplane. Psychometricians and experts in tests and measurements have developed a large number of valid aptitude tests, for successful prediction of future performance, in a number of jobs, requiring very different types of skills. Prudent use of such aptitude tests can help in making personnel decisions optimal. This inter-relationship between the predictive validity of aptitude test and quality of decisions for personnel selection, may be explained with the help of an example, from the field of higher technical education, say selection of candidates for imparting training as commercial pilots.

Fairly efficient tests for measuring flying aptitude have been developed. Such a test is a good predictor of future performance in flying aeroplanes, after undergoing a course of the required pilot training. In statistical language, this means that scores made *now,* before the training, correlates appreciably (i.e., significantly above chance level), with future performance scores in tests of flying, after completing the training.

Like most psychological tests or academic examination results or selection tests, the validity of such an aptitude test will be less than perfect. If this test is administered to a large group of unselected candidates for pilot training, and all of them are then admitted to the pilot training course, and after completion of training are tested for proficiency in flying planes, the inter-relationship between the distributions of the scores made by the group on the aptitude test before training, and scores made by them in the flying proficiency test at the end, can be represented by an oval shaped envelope for the scatter plot obtained from the two sets of scores. This is illustrated in Figure 1.

Two cut-off lines have been drawn : one at score of 95 for the aptitude score, and another at 150 for the final proficiency test in flying. On the basis of accumulated experience

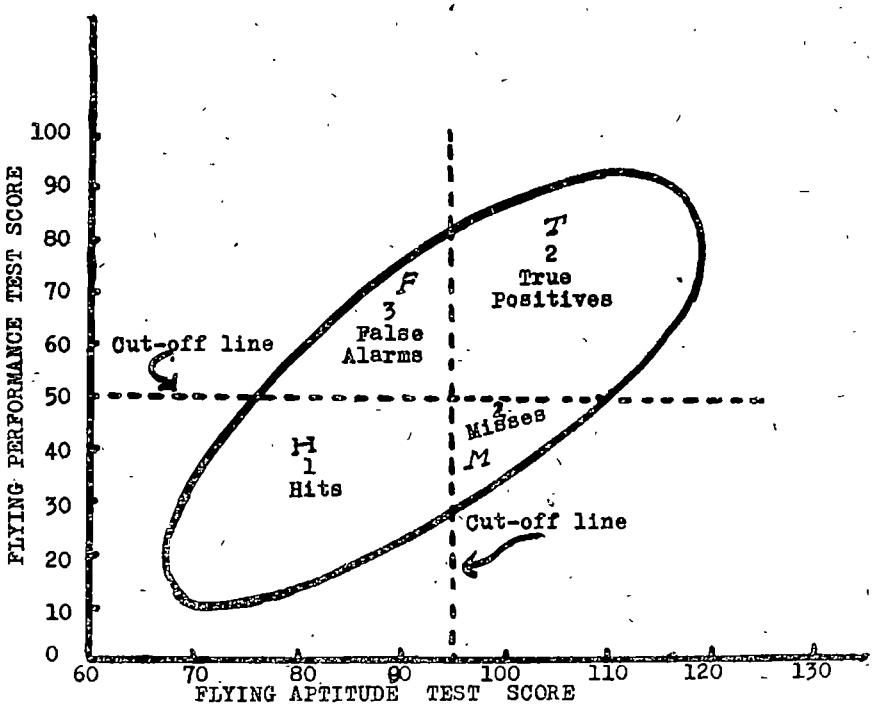


Figure 1. Envelop of scatter plot of scores in a Flying Aptitude Test as predictor, and a Flying Proficiency Test as the criterion, divided into four sections, by two optimal cut-off lines.

of previous testing results, it is decided that those applicants who get scores below 95 should be rejected for admission to the pilot training course : and those trainees who get below 50 in the final flying proficiency test are not allowed to take up the profession of flying planes. The two cut-off lines divide the scatter plot envelope into four parts or sections, named H, T, F and M.

(1) The section called H consists of those candidates, who got low, non-qualifying marks in the aptitude test, and also failed in the flying test. These are called *hits*, because these were the poor applicants, who proved to be failures, and have been picked up correctly by our selection test : these candidates scored poorly in the aptitude test, and after training they failed in the flying test.

(2) The section called T, consist of those candidates who got high scores on the aptitude test before training, and they also passed the flying test after completing training. These are also hits, and are called *true positives*, because they have been correctly picked up by the aptitude test as potentially successful pilots.

(3) The section named F, consists of those candidates who got low scores in the aptitude test, but after training got passing marks in the flying proficiency test. These are the *false alarms*, because these cases, due to their poor scores in the aptitude test, would have been wrongly denied admission to the pilot training course, in which they did well, after training as shown by their getting pass marks in the final flying test.

(4) This section called M, consists of those cases who got high scores in the aptitude test, but after training, failed to obtain qualifying marks in the final flying proficiency test. These are the *misses*, because our aptitude test missed these applicants who were potentially poor material for flying planes : they would have been wrongly admitted to the course, for which they proved to be unsuitable.

A really good, satisfactory test or screening device, must minimise the number of 'false alarms' and 'misses'. (The misses are also called *false positives*). Mainly, there are two ways of attaining this end—which boils down to shrinking the areas named F and M, in the envelope, containing the false alarms, and misses. One is to refine the aptitude test used for selection or screening, which amounts to increasing the validity of the test, by following psychometric principles : as the correlation between the aptitude test and the proficiency test increases, the envelope of the scatter plot becomes narrower and thinner, with concomitant reduction in the bulge in the middle. This is the scientifically approved method. The other method depends upon shifting the cut-off points, either singly or jointly, in order to shrink the areas under sections F or/and M.

Suppose, we decide to shift the cut-off point for the aptitude test to 78, from 95 which was the original qualifying score, as shown in Figure 2. This amounts to adoption

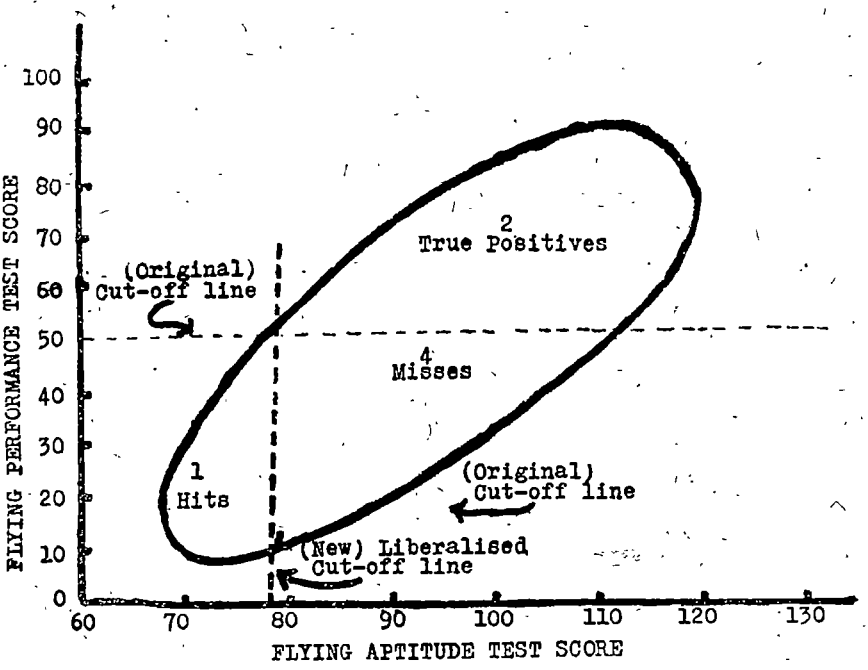


Figure 2. Effect of liberalising the cut-off point in the predictor test (Flying Aptitude Test) score on the relative areas of the four sections of the envelope.

of a more lenient or liberal enrolment policy. The number of false alarms is at once reduced, which means, no potentially deserving applicant for pilot training has been wrongly rejected from the training course. However, the number of misses or 'false positives' is increased proportionately ; this means a large number of trainees will be allowed to enrol for costly training, but a substantial proportion of them will not be able to make good. All the investment in training of the false positives will be a waste. We should realise that with a liberalization of the enrolment policy—to permit preferential leniency for one particular community, a substantial portion of the social investment is likely to be wasted, *so long as the qualifying mark in the final proficiency test remains the same.*

The next alternative is to shift the cut-off score in the aptitude score to a still higher point, say, 115, Enrolment to the training course is made stiffer. The number of false positives is reduced drastically, but there is a concomitant increase in the number of false

alarms. That means that some potentially good pilots may be screened out, wrongly, due to excessive strictness of the screening test.

A third alternative is to shift the qualifying mark in the final proficiency to a lower score, say 30, as shown in Figure 3. A large number of false positives become true positives,

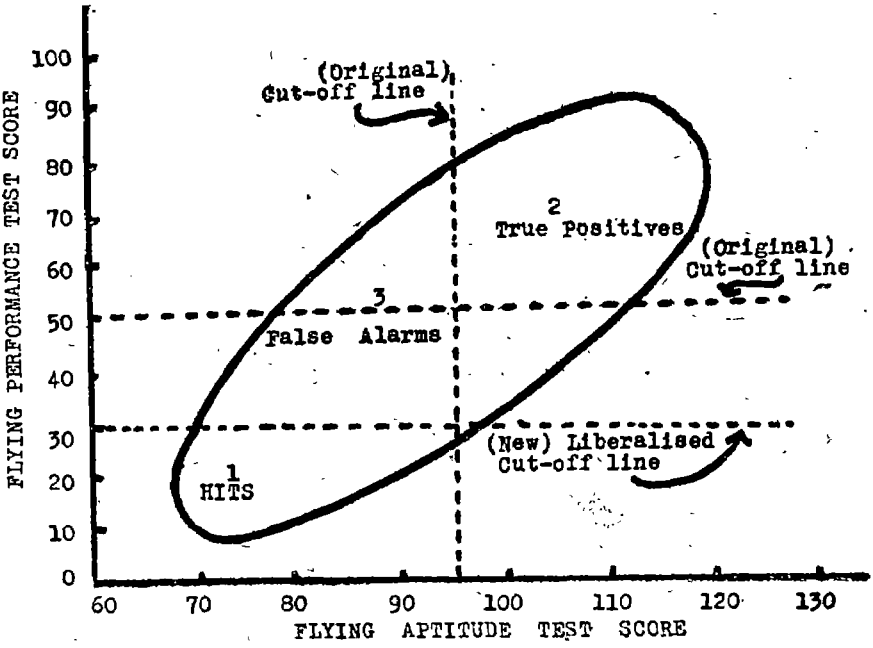


Figure 3. Effect of liberalising the cut-off point in the final qualifying Flying Performance Test score on the relative areas of the four sections of the envelope.

because they are declared as successful pilots now. A little consideration will show that this strategy of lowering the qualifying mark in the final proficiency test is of dubious value, and can have disastrous consequences in future practice. By lowering the level of proficiency deemed necessary for successful pilots, we are taking enormous risks. The pilot, though really deficient, has been declared successful : the quality of the service he can render remains poor ; he is likely to make more mistakes than a really good pilot. And the results of any mistake by a pilot can be disastrous : an extremely expensive plane may be damaged or lost ; what is more serious, lives may be lost, the price of which cannot be calculated. All because, we have unwisely declared an individual to have become a pilot, by lowering the qualifying mark for him *specially*, as he belongs to a particular community, while he should not have been declared so.

If the larger interest of the community or nation as the client party is to be safeguarded, then we have to ensure that mistakes, as far as is humanly possible, must not occur, during the actual performance of duty by the professional, the expert, the specialist, when he is giving his service to the client. This can be ensured only by enforcing the highest level of proficiency in the job—be it flying a plane, or carrying out a cardiac or cortical surgery, constructing a bridge, or presiding over a judicial bench.

A policy of selective liberalization of qualifying standards in a profession, by lowering the minimum qualifiying mark in the final proficiency test, is far more counter-productive and risky, than a policy of selective liberalization of qualifying marks for selection or enrolment in sophisticated courses in science, technology and certain professions demanding high levels of skill and ability. As we have seen above, such a policy results in

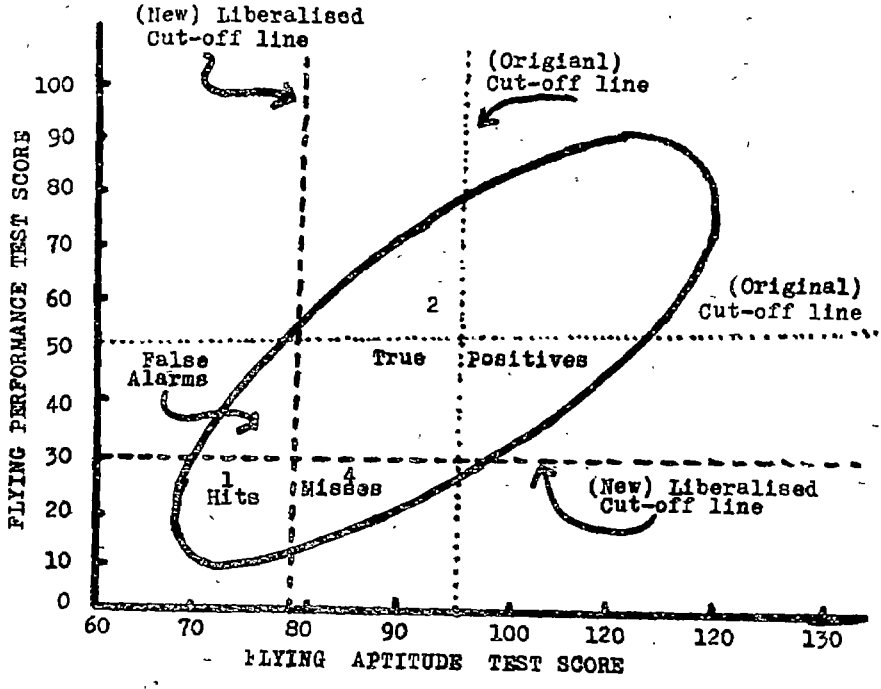


Figure 4. Effect of liberalising the cut-off point in the predictor test (Flying Aptitude Test) score as well as in the final qualifying Flying Performance Test score on the relative area of the four sections of the envelope.

an increase in the number of false positives. The enromous cost of training of a large number of persons, many of whom being really incapable of benefiting from such training, has to be borne by the society. Reservation of quotas and selective lowering of enrolment in institutes of higher learning is thus counter-productive. However, so long as the final qualifying standard is not tampered with, the situation is not too bad : those who fail to reach an acceptable level of proficiency are debarred from entering the profession for serving the community. Any liberalization of the qualifying mark for final entry into a profession removes the safeguard against the unwise policy of lowering standard for preferred communities to enrol for training.

This line of analysis shows the importance of finding cut-off points which are optimal, in the sense that the loss to the society for its failure to provide training to the false alarms—potentially good surgeons, physicians, pilots, engineers, lawyers, and scientists being denied the opportunity to prove their worth—has to be balanced against the cost to the society in making two types of mistakes : cost of training potential failures, and risk of declaring persons capable of assuming high responsibility when basically they are below mark.

This dilemma is very poignant in those spheres of professional and technical training, where the finished product, the expert, or the specialist, is vested with such responsibilities that the cost of even a small mistake is very high, and has to be met by the clientele served by him : the patients in the clinic, the passengers in a plane, persons seeking justice, and so on.

This type of analysis makes a convincing case for maintaining a stringent cut-off point for recruitment tests, and far more so, not lowering the standard of the minimum qualifying marks in final tests of proficiency for entering the professions. The future welfare of the community cannot be mortgaged to the supposed welfare and social justice to a

limited section of the community. Let it be pointed out that maintenance of strict cut-off points is equally harsh to all sections of the community. The policy of reserving seats for higher specialised training becomes discriminatory when lower standards are prescribed for enrolment for a particular set of applicants. The argument, which politicians are fond of trotting out that we are thereby trying to do justice to a disadvantaged section of the community, is specious, when we realise that not only injustice is being done to some meritorious candidates, but more seriously, we are exposing the entire society to the ministrations of the so called specialists and experts, who, in reality are second raters.

This line of analysis can be extended to the policies of fixing up quotas for promotion, for higher level specialist training, for the system of carrying over, and of conversion, and it can be shown that they are not defensible on decision theoretic grounds. The constitution makers had intuitively guessed the cogency of the line of thinking outlined above, when they laid down that "the claims of the scheduled castes and scheduled tribes be taken into consideration *consistently with maintenance of administration*" (Part XV, Article 335, italics added). The point is that all policies of liberalization at the time of admission to general courses, amounts to increasing opportunities to all, and no risk is involved. But reservation at higher levels, or at the time of promotion to higher echelons of jobs, or for undergoing specialist training involves heavy cost to the nation, which, in turn, demands certain minimum level of the quality of services from the professionals, specialists and experts. There cannot be any dilution of the qualifying standards for experts, and specialists, where they serve a clientele, and where the cost of any error is high and has to be borned by the clientele.

The risk from the policy of reserving seats at the MBBS level is relatively less than at the MS or MD level. The social injury of a mistake committed by the driver of a taxi cab is far less than that of the driver of a fully loaded transport bus. The cost of an error committed by the driver of a freight train is far lesser than a mistake committed by the driver of a super fast express train. The error committed by a general practitioner is likely to be less costly than that of cardiac surgeon or a gynecologist.

To complete this line of argument it should also be pointed out that admission of students to the MBBS class or engineering degree class, by paying huge capitation fees, if the level of the qualifying standard is lowered down also amounts to artificially and cynically increasing the number of false positives. Of course, we can argue that the social risks can be minimised to some extent by strictly adhereing to stringent standards for passing in the final proficiency examinations. But this argument is weak, because it ignores the huge investments made for training of those who are essentially second raters, from whom the return to the community, in terms of the quality of service rendered to the clients, is bound to be low.

Ideally, no injustice should be done to the meritorious, irrespective of his class, caste or religion, neither at the time of enrollment, nor at the time of promotion. Any policy that does injustice to merit injures the society in the long run.

Only on grounds of political expediency can the advocacy of reservation for promotion or higher level training be defended. But no amount of logical argument will cut any ice with politicians, who, unfortunately in our country, are extremely short-sighted and selfish. However, political expediency is a global phenomenon, with no north-south dividing line. Our case is complicated by the fact of the presence of tremendous inconsistency among most political parties.

Refinement of Personnel Selection Decisions

Estimation of social costs and social benefits and returns entails a lot of value judgment and are generally notional in nature: Therefore one can anticipate an area of uncertainty, with arguments in favour or against setting up of cut-off points in the selection tests, and the related selection or recruitment policies. Those who favour shifting of the cut-off point

to a lower score, for preferred sections of the community, for purposes of selection to higher courses of learning, may put forward the followong arguments :

(1) A 'failure' may not be a total, irretrievable, social loss. The Harijan or the Adivasi candidate may stand to gain a good deal from the higher training, even if he fails to pass the final qualifying examination. If allowed to enrol he may become more worth to his community, and to the larger society, because of whatever he learns.
(2) If a Harijan or Adivasi candidate is refused admission to a higher level course, we are shutting off all chances of enriching him, and through him, his community. After enrollment, perhaps his deficiencies could be identified, and remedial measures taken, so that he could make grade.
(3) When the nation urgently needs more doctors, engineers, pilots, and management experts, will it not be advisable to go for a policy of 'processing even low-grade ore', to get a few more experts?
(4) After all, all tests are fallible ; no test is perfectly valid. An error made in wrongly rejecting a potentially good candidate, cannot be rectified.
(5) The ex-Janata Minister, Rabi Ray (1981) argues that "I must make it absolutely clear that ideas and tests about merit and competitive selection are irrelevant in an unequal society."

Most of the arguments stated above are either logically weak and one-sided, or just specious, of which the last one by the ex-Minister is a typical example. Political leaders consider themselves competent to make value judgments and give final verdicts on subjects about which he may be unletered and utterly ignorant. It will be a waste of effect to argue logically against such divine pontifications.

Certain counter arguments can be made for making the cut-off points of selection tests still more stringent. At least such a policy if strictly enforced will reduce the enormous cost of training the large number of undeserving false positives. This will prevent scarce educational resources being wasted upon undeserving candidates : the resources thus saved can be spent more effectively on the really deserving trainees. Again, from even a humanitarian point of view, the young candidate who is going to fail ultimately, in the final qualifying examination, is better off facing this reality early, rather than waste valuable years in search of a chimerical goal.

At this stage, it may be pointed out that the technology of personnel selection, placement and training is far more advance and sophisticated than the simplified account given above. Various refinements have been achieved in testing and measurement theory. which help in increasing the validity of the prediction from test performance *now*, to future performance on the job, *after* training is completed. The lines of improvement are briefly summarised below.

1. Instead of using only one aptitude test as a predictor for future job performance, a number of predictor tests are used. By using what is known as multiple regression techniques, a composite score is obtained which predicts future performance much better than a single predictor ever can. Again, there are statistical techniques like multiple discriminant analysis, which helps in proper placement of candidates into one or other trades or jobs, after the initial selection has been made. For example, young cadets can be divided into three groups, to be placed for the army, navy or air force wings. These statistical techniques are based upon an implicit 'compensatory' model of human abilities and performance. The basic idea is that relative deficiency in one area, i.e., in one skill, or ability, or factor, can be compensated by relative superiority in another skill, ability or factor, so that a satisfactory level of performance in most jobs is assured. The entire generalist orientation of the higher administrative services like the I.A.S. is based upon this compensatory model.

2. Some scholars hold that there are certain very high level jobs and professions where a satisfactory level of performance demands a non-compensatory model of func-

tioning. That is, a certain minimum level of functioning is called for each component of the total performance in the complex job at hand. Whereas the compensatory model uses what is called a 'linear composite' method of scoring for selection decisions, the non-compensatory model uses what is called the multiple cut-off method of scoring for making selection decisions. The two methods are illustrated in Figure 5.

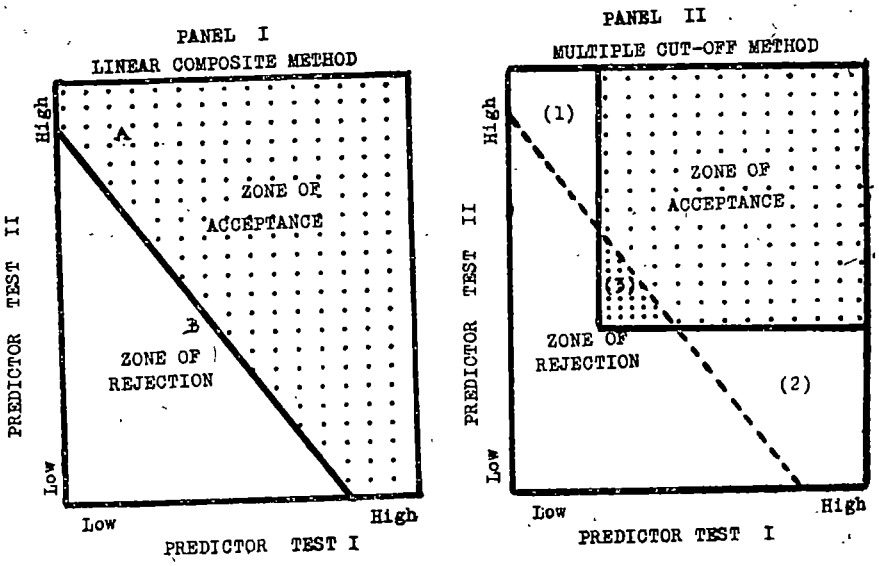


Figure 5. Selection by the Liner Composite Method based upon the Compensatory Model, and the Multiple Cut-off Method, based upon the Non-Compensatory Model, using two predictor tests, I and II.

In the Linear Composite method shown in Panel I of Figure 5, candidate A has got low score in Test I, but high score in Test II, and is selected, because he falls in the upper, acceptance zone which is shaded. Likewise, candidate C, getting high score in Test I, an low score in Test II, is selected. But candidate B, obtaining moderate scores in both tests I and II, is rejected.

In the multiple cut-off method, a minimum score in Test I and a minimum score in Test II will be required in order to quality for acceptance. It means that candidates falling in region (1). with low scores in Test I, but high scores in Test II, and candidates in region (2), with high scores in Test I, but low scores in Test II, will be rejected if we follow the multiple cut-off method, though they would be accepted if we follow the linear composite method. There is a small region (3) which contains candidates which are accepted by the multiple cut-off method, but rejected by the linear composite method, and they can be accomodated by resorting to what is called the non-linear composite method, in which the boundary line for the acceptance region is curved inwards to exclude the region named (3) in the II Panel.

3. Developments in the field of differential aptitude testing, differential prediction and configural prediction, have improved the accuracy of the selection tests. Increasingly greater use is made of differential predictions in decisions for classifications, placement and further training in narrow specialist areas. The presence or absence of interactions between aptitude and treatment is taken care of by refining the method of differential prediction. The worth of all valid classification and selection tests depends upon the fact that the cost of training or employing or promoting the false negatives will always be only a fraction of the investment under the same heads for the entire group of hits and true

positives. When the situation is reversed, the selection test is worthless, and should be scrapped.

The social costs and benefits of different types of decisions following selection, recruitment, placement, and training, in the sphere of higher scientific, technical and professional education, can be analysed using a value-free objective framework, making use of the calculus made popular in test theory and decision theory. If policy makers in power decide, that certain things are good for the nation, relying upon value judgment or on grounds of political expediency (one example was given in the form of pronouncement of Mr. Rabi Ray, who seems to forget that he is now neither a Minister nor a seer), these types of arguments will cut no ice with them. In the field of reservation, which policies are made for gaining political mileage, and which are made with genuine social welfare in mind, is not easy to decide. When a politician like Rabi Ray advocates that what "we adopt a policy of special opportunities and reservation for the socially backward classes designed to raise their classes and bring about social equality", he appears to be quite innocent about their implications when implemented in the field of higher education.

Most writers on this issue have failed to recognise the fact that the policies of reservation have different impact, resulting in altogether different types of outcomes, as they are applied to different spheres. Provision of reserved constituencies, or reservations of a certain number of jobs, (where the number of applicants is much greater than the number of vacancies), do not have qualitatively the same type of impact when applied to reservation of seats in institutions of higher learning. Here much national resource is invested with a view to get some return of certain minimum standard from the personnel trained in such institutions. Shifting of standards of the service, in order to be kind and lenient to certain classes of trainees, damages the very purpose of running such institutions. It is an experiment no less disastrous than the 'backyard mini steel plants' that China tried decades back. Doing social justice to the down trodden, or reduction of social disparities have to seek other solutions than tampering with decisions about selection and placement of candidate in the sphere of higher technical and professional education.

References

1. Brogden, Hubert E. An approach to the problem of differential prediction. *Psychometrika,* 1946, **11**, 139–154.
2. Cronbach. Lee J. *Essentials of Psychological Testing.* (3rd ed.) New York : Harper and Row, 1970.
3. Cronbach, Lee J., and Gleser, Goldine C. *Psychological Tests and Personnel Decisions.* Urbana, Illinois University of Illinois Press, 1957.
4. Ray, Rabi. A case for reservation. *Vigil,* 1981, *III*(36), 3, 8–9.
5. Thorndike, Robert L. *Personnel Selection :* New York : Wiley, 1949.
6. Thorndike, Robert L. The problem of classification of personnel. *Psychometrika,* 1950, **25**, 215–235.

B.B. Chatterjee

STUDENT EVALUATION OF INSTRUCTORS AS A FUNCTION OF EXPECTED AND OBTAINED PERFORMANCE

Although student evaluations of their instructors are quite widespread (cf. Costin et al, 1973; Kohlan, 1973), there is still considerable debate over their reliability and validity (e.g., Cohen & Berger, 1970; Frey, 1973; Rodin & Rodin, 1972). The present study which examines the effects of actual and expected performance of student evaluations should be seen as an attempt to throw some light on the problem. It is based on the assumption that student evaluations are influenced by a number of factors besides the actual performance of the instructor, and that among such factors the following three are likely to be very

important; (i) how well the student thinks he is going to do in the course (expected performance), (ii) how well the student actually does on the course (obtained performance), and (iii) whether the student does better or worse than expected (the difference between obtained and expected performance).

No previous study has examined the effects of these three factors on student evaluations experimentally. Hence the need for a study such as the present one in which university students taking a fully fledged course, consisting of a series of lectures followed by a class examination, are *randomnly* assigned to different conditions of expected and obtained performance. The main hypothesis to be tested in the present study is that doing better than expected on a course will lead students to rate their instructor positively, whereas doing worse will have the opposite effect.

Method

Subjects : The subjects in the study consisted of 64 first-year university students enrolled in a special orientation programme, designed to bridge the gap between school and university, especially in those areas where the average first-year is found to be deficient. The programme consisted of a series of lectures and practicals in three subject areas; mathematics, communication, and literature. The average age of the students was 18.6 years. All had high school graduation certificates that entitled them to enrol at the university, and had elected to take the Communications course, offered as part of the university-wide orientation programme, that preceded the commencement of the first-year lecture programme. The aim of the course was to improve the students' capacity to communicate accurately and fluently, both verbally and in writing. The lectures and practicals were all given by an experienced instructor from the Department of Communication.

Procedure : The subjects were randomnly assigned to one of nine conditions in a 3 x 3 factorial design, comprised of three levels of the independent variable of expected grade (high, medium, low) and three of the independent variable of obtained grade (high, medium, low). The dependent variable was the subjects' ratings of the instructor's performance during the course.

At the first meeting (prior to the beginning of the course proper) the subjects were told by the instructor that the course they were about to attend was unlike any other they had taken at school and that success on the course was not closely related to how well (or poorly) they had done in the usual school subjects. However, they were told that it was important to get an indication of their present capacity to communicate fluently and accurately, because it had very strong effects on their ability to benefit from the course. Finally, the subjects were told that, as a direct result of these effects, their final grades on the course examination could be predicted very accurately from their performance on a specialized test of their communication skills. At this point, all the subjects were given a specialized test of their 'capacity to communicate accurately and fluently'. In the actual test, the subjects were given 15 minutes to read a 10-page article, and to prepare a short summary of its main points. The article was then removed while each subject individually gave a five-minute description of its main points into a tape-recorder. The point of the exercise was to lead subjects to believe that they were furnishing the lecturer with information that would indicate the likelihood of them doing well or poorly on the Communications Course.

After the subjects had completed the specialized test, the meeting was terminated, with the instructor telling the subjects to gather at the same place the next day when they would be given an indication of how they had done on the aptitude test and would attend their first lecture. The next day, prior to the lecture, each subject was told that because of their performance on the aptitude test he or she should perform 'better', 'same', or 'worse' than 'most of the class' on the lecture course; all the subjects in the 'better' group were told they were likely to get grade A. those in the 'same' group that they were likely to

get grade B, and those in the 'worse' group that they were likely to get grade C. This represented the manipulation of the independent variable of expected performance. In actual fact the A (better), B (same), and C (worse) grades were randomly assigned to the subjects by the instructor, irrespective of their performance on the aptitude test.

After the completion of the three-week course (consisting o f 12 lectures and 6 practicals), the subjects completed a short examination or class test, made up of 40 multiple-choice questions covering each of the main sections of the course. After completing the test or examination, the subjects were told to gather the next day at the same place when the lecturer would inform them of their performance. When the subjects returned they were told individually they had done 'better' (grade A) 'same' (grade B) or worse' (grade C) than 'most of the class' on the class test or examination. This represented the manipulation of the independent variable of obtained performance. In actual fact, the three grades, A, B and C were randomly assigned to the subjects by the instructor, independent of how well or poorly they had done on the examination.

Immediately after getting their grades, the subjects independently evaluated the lecturer or instructor of the course, using a 21-item version of the Teaching Rating Form (TRF) developed by Pambookian (1974) from the original form of McKeachie et al (1971). This version consists of a series of three-item subscales chosen because of their high loadings on the following seven teaching dimensions; skill, achievement, interaction, overload, structure, rapport, and feedback. For each item subjects indicated on a five-point scale the degree to which the item statement is descriptive of the particular lecturer, from 'very descriptive' (5) to 'not at all descriptive' (1). Because the different scales correlated significantly with each other ($p < .01$) and the focus of attention was on the *overall* performance of the instructor, the subjects responses to the various items were summed to yield a single score indicating their overall lecturer evaluation. In addition, subjects rated the lecturer on a single item of general teaching ability, also on a five-point scale ranging from 'excellent teacher' (5) to 'poor teacher' (1). Finally, before leaving they were asked to indicate on a single five-point item how well they thought they had done on the test or examination, using the following scale; 3=better than most of the class, 2=same as most of the class, and 1=worse than most of the class. This served as a check on the effectiveness of the manipulation of obtained performance. After completing these rating forms, the subjects were debriefed. As this debriefing the researcher supplied the subjects with their actual examination marks and apologized for having given some them incorrect information. None of the students indicated then, or later, that they were personally upset in any way by the deception.

Results and Discussion

The data was analysed in three ways. First, to examine the effects of expected and obtained performance on instructor evaluations, a 3 x 3 analysis of variance was performed on the data, with the independent variables being expected performance or grade (A, B, C) and obtained performance or grade (A, B, C) and the dependent variables the subjects' responses to (a) the 21-item TRF scale, and (b) the 5-point single item of teaching ability.

Second, a one-way analysis of variance was performed on (a) the subjects total scores on the TRF, and (b) the subjects response to the single teaching ability item, following the procedure recommended by Aronson & Linder (1965), to establish the extent to which feelings of 'gain' (positive disconfirmation) and 'loss' (negative disconfirmation) influenced the subjects evaluation of the lecturer. In this analysis, the nine cells in the 3 x 3 analysis of variance were collapsed to form three kinds of outcome groups, which formed the independent variable ; namely (a) positively disconfirmed (gain) group, (b) confirmed (unchanged) group, and (c) negatively disconfirmed (loss) group; specifically, the 'gain' group consisted of subjects who expected a B grade but received an A grade, and those who expected a C grade but received A or B grades; the 'unchanged' group, of subjects who expected A, B or C grades and received the same grades; and the 'loss group' of subjects

who expected a B grade but received a C grade and those who expected an A grade but received B or C grades.

Third, rank-order correlations were computed between grades on the course examination and the independent variables of expected and obtained performance. To perform this analysis the following ranks were assigned to expected and obtained performance A=1, B=2, C=3. In addition, a one-way analysis of variance was performed on the mean examination grade of students in the 'gain' (positively disconfirmed), 'unchanged' (confirmed) and "loss' (negatively disconfirmed) groups. Finally, product-moment correlations were computed between examination grades and student ratings of how well they thought they had done on the examination (1=worse, 2=same, 3=better than most of the class).

The results indicated clearly that the grade expectations were effectively manipulated. For instance, the analysis of variance on the manipulation check item yielded only a significant main effect for expected grade, $F(2,61)=8.81$, $p=.001$; with the mean expectation scores being in the predicted order, namely high expectation (M=89.61), medium expectation (M=71.38) and low expectation (M=40.97). A Scheffe test of multiple comparisons indicated that the differences between these means were each significant at the .01 level.

The results from the two-way analysis of variance showed that lecturer evaluation, as assessed by both the TRF and the teaching ability item, were strongly affected by the variable of obtained grade. For instance, there was a significant main effect for obtained grade on TRF total scores, $F(2,61)=5.98$, $p.<.05$, and on teaching ability item scores, $F(2,61)=3.01$, $p<.05$. In both cases, the higher the obtained grade, the more favourable the evaluation received by the lecturer. Among the subjects who obtained a high grade, the mean TRF score was M=79.21 (SD=9.98); among those who obtained a medium grade, it was M=74.23 (SD=10.01); and among those who obtained a low grade it was M=64.20 (SD=8.85). The corresponding teaching ability mean item scores were : high, M=3.43 (SD=1.03); medium, M=2.69 (SD 1.11); and low M=2.01 SD=1.08). A Scheffe test of multiple comparisons indicated that each of the difference between those mean score was significant at the .05 level for both dependent variables.

The two-way analysis of variance also revealed that lecturer evaluation, as assessed by both the TRF and the teaching ability item, was very strongly affected by the expected grade variable. For instance, both the main effects of expected grade on TRF total scores, $F(2,61)=7.80$, $p<.001$, and on teaching ability item scores; $F(2(61)=3.26$, $p<.01$, were highly significant. In both cases, the higher the expected grade, the *less* favourable the lecturer's evaluation, as predicted. Specifically, among the subjects who expected a low grade, the mean TRF score was M=80.01 (SD=9.91); among those who expected a medium grade, it was M=69.97 (SD=10.01; and among those who expected a high grade it was M=64.35 (SD=9.85). The corresponding teaching ability mean item scores were; low, M=3.55 (SD=1.01), medium, M=2.14 (SD=1.10) and high, M=1.19 (SD=1.04). A Scheffe test of multiple comparisons indicated that each of the differences between these mean scores was significant at the .01 level, for both dependent variables.

The results of the one-way analysis of variance designed to test the hypothesized effects of 'gain' and 'loss' on lecturer evaluations revealed significant effects on both the TRF total scores, $F(2,61)=5.21$, $p<.01$, and on the teaching ability item, $F(2,61)=p<0.5$. On the TRF scale the mean scores of the three groups were : positively disconfirmed (gain) group, M=82.65; confirmed (unchanged) group, M=70.01 (SD=10.11); and negatively disconfirmed (loss) group, M=59.96 (SD=9.75). A Scheffe multiple comparison test revealed that the differences between those three mean scores were each significant at the .01 level in the predicted direction. On the teaching ability item, the mean scores of the three groups were positively disconfirmed (gain) group, M=2.86 (SD=1.01); confirmed (no change) group, M=2.09 (SD=.97); and negatively disconfirmed (loss) group, M=1.42 (SD=.98). A Scheffe multiple comparison test revealed that these three mean scores differed significantly from each other at the '05 level, also in the predicted directions.

Finally, examination grades were not significantly ($p<.05$) correlated with either expected performance (rho=.09) or with obtained performance (rho=.13). The one-way

analysis of variance also did not reveal a significant effect for 'gain' or 'loss' on examination grades ($F=1.31$, $df=2,61$, $p<.05$). Although there was a positive correlation between examination grades and student ratings of how they thought they had done, it was not significant ($r=.21$, $p<.05$).

The results indicate that whereas obtained performance had a significantly positive impact on student evaluations, expected performance had the opposite effect, with students led to believe they would perform relatively well rating the instructor *less* favourably than those who believed they would perform relatively poorly. In addition. they reveal clearly that student evaluations were affected by whether the students performed better than expected (gain) or worse than expected (loss). Specifically, students whole expectations were positively disconfirmed (gain) rated the instructor much more favourably than those whose expectations were confirmed (no change). In turn, students whose expectations were confirmed (no change) rated the lecturer much more favourably than those whose expectations were negatively disconfirmed (loss). Finally, because expected and obtained performance were varied without regard to capacity or examination grades, it is not surprising that the grades the students actually obtained in the course examinations were unrelated to both expected and obtained performance.

The fact that expected and obtained performance *caused* students to evaluate their instructor in this way, suggests that such evaluations should only be used to compare instructors, if students taking their courses do not differ very widely in (a) the average grades they obtain, and (b) their expectations of their likely average grades. However, before too firm in interpretation is placed on the findings of this field experiment, two cautionary remarks are required. First, the course taken by the subjects was not a normal or usual univeristy course. For one thing, it was taken as part of a university-wide orientation program, and was not an integral part of the students degree programs. For another, the course was much shorter than most university courses and did not have to be passed for the students to graduate, unlike most university courses. Second, to conform to the dictates of experimental design, it was necessary to introduce a number of elements that may have been perceived as 'unnatural' by the subjects. Specifically, telling the subjects that they were likely to perform better, same, or worse than the rest of the class is not the same as learning from their own experience that it is reasonable to perform at a certain level. In addition, it is not common for students to be asked to evaluate their instructors, immediately after being told how well they have done in the examinations. As surveys (e.g., Hildebrand et al, 1971; McKeachie, 1969) have shown, it is usual for such evaluations to be collected first prior to the final examinations for the course. Finally, whereas most scales employed in student evaluations have focussed on different aspects of the course, the present study deliberately employed an instrument that concentrated just on the instructor himself.

In view of those limitations, generalizations from the present findings should be made very cautiously. More research is needed before the conclusions of the present study can be used as a basis for taking important decisions regarding the way in which student evaluations are to be collected and their results used.

References

1. Cohen, S.A., & Berger, W.G. (1970) Dimensions of student ratings of college instructors. *Proceedings of the 78th Annual Convention of the American Psychological Association*, 5, 605–606.
2. Costin, F., Greenough, W., & Menges, R.J. (1973) Student ratings of college training : Reliability, validity and usefulness. *Review of Educational Research*, **41**, 511–535.
3. Frey, P.W. (1973) Student ratings of teaching : Validity of several rating forms. *Science* **182**, 83–85.
4. Hildebrand, M., Wilson, R., & Drenst, E. (1971) Evaluating university teaching. Berkeley, Calif. Centre for Research, Higher Education.
5. McKeachie, W.J. (1969) Student ratings of faculty. *American Association of University Professors Bulletin*, **55**, 439–444.

6. McKeachie, W., Lin, Y., & Mann, W. (1971) Student ratings of teacher effectiveness, *American Educational Research Journal,* **8**, 435–445.
7. Pambookian, H. (1974) Initial level of student evaluation of instruction as a source of influence on instructor change after feedback. *Journal of Educational Psychology,* **66**, 52–56.

Christopher Orpen

PARTICIPATION, FACULTY SATISFACTION AND PERCEIVED INSTITUTIONAL CLIMATE

A major outcome of review of researches on participation in industrial setting is that employee participation in democratic atmosphere created by permissive leadership facilitates the development of internalised motivation and serves to raise levels of employee production and morale. These researches have shown that (1) considerably high proportion of the members headed by a permissive leader considered themselves to be satisfied with their jobs, (2) larger proportion of members rated the productivity of their division either very high or high, (3) considered the morale of their work group very high. Similar conclusions of positive relationships between teacher perceived participation in educational business management and staff personal decisions have been reported from some of the studies of teacher participation in educational establishments, indicating some similarity of work situation in the two types of organizations, industries and educational instituions.

Following the findings of these researches in the western countries a set of hypotheses has been formulated and the objectives of the present study is to test these hypotheses and to see whether or not the findings of the studies in the western countries hold true in educational institutions in Indian setting, where lately education has begun to be viewed as an industry in the sense that there is increasingly an expectation of growth and return from education. In this paper attempt is made to test these hypotheses and to see if these can be retained in the two groups of professional colleges in India, nursing and teacher training.

Hypotheses : It was hypothesized that

(1) Faculty members in nursing institutions will have participatory role to play in larger number of areas of administration and at higher levels than those in teacher training institutions. They will also perceive their institution's climate more favourably and will be more satisfied in their institution than the teachers in training colleges. In other words, the Participation, Satisfaction and Climate scores of nursing faculty will be significantly larger than those of the faculty members of the teachers' colleges,

(2) Participation scores will be positively correlated with satisfaction scores and that the teachers in institutions with high participation scores will be more satisfied with their institution than those in institutions with low participation scores,

(3) Participation scores will be positively correlated with perceived climate scores and that teachers in institutions with high participation scores will perceive their institution's climate more favourably than those in institutions with low participation scores. In other words, the perceived climate scores in institutions with high participation scores will be significantly higher than those in institutions with low participation scores,

(4) There will be positive relationship between perceived institutional climate and satisfaction of teachers.

Instruments and Procedure

To test the above hypotheses, three sets of data on teachers' participation, their satisfaction with their institution and their perception of the climate of their institution

were collected. Data on the extent of participation available to teachers were collected with the help of a participation scale. The participation scale used in this study was the modified version of Srivastava (1975) Student Participation Scale, and Srivastava (1978) Participation Scale. The modified version of the Scale developed after item analysis and a validation study consisted of 26 items spread over three dimensions of the Scale, Participation Process Continuum Dimension, Structure for Participation Dimension, and Participation 'Feel' or Climate Dimension. The Participation Scale was used to assess the overall state of faculty participation, and to identify and classify the two groups of professional colleges, nursing and teacher training together as well as separately as 'high faculty participating' and 'low faculty participating'. Data on teachers' satisfaction and their perception of the institutional climate were obtained by the use of TAPE FORM B (Transactional Analysis of Personality and Environment) developed by Lawrence A. Pervin and adapted to Indian conditions by Sushil K. Jindal.

For testing the hypotheses the research design suggested that the institutions with high and low teacher participation scores be first identified. This could be done by using either the Median of the score distribution for teacher participation or by using the 27% top and 27% bottom scores. Both the Median and the 27% (actually about 30%) top-bottom scores criteria were used for classifying the institutions in the two categories—high participating and low participating, for testing and retesting the hypotheses. But before the two criteria were used the institution's teacher participation scores were determined by pooling and averaging out the scores given by the respondents, principal/director and teachers in the institution. As the study was concerned with a total of only 32 institutions (14 nursing and 18 teacher training) both the criteria i.e. Median and 27% top-bottom scores were used for classifying only the total group of these 32 institutions in the two categories; the groups of nursing and teachers' colleges have been classified in the two categories, high participating and low participating by using only the Median criterion as the use of the 27% top-bottom criterion for each of the two groups of professional colleges respectively would have so much reduced the number of observations in the two categories of institutions that any valid conclusion could hardly be drawn.

For testing the hypotheses two types of statistical treatments were given to the data (1) computation of correlation between (a) participation and satisfaction scores of teachers, (b) teachers' participation scores and perceived climate scores, and (c) satisfaction scores of teachers and perceived climate scores. For computation of correlations the institution's satisfaction scores of teachers and perceived climate scores respectively were also determined by averaging out the scores given by the teacher respondents in the institution and then product moment correlation was worked out between each of the 14 nursing, 18 teacher training and 32 combined group of nursing and teacher training institutions' participation and satisfaction scores, participation and climate scores, and satisfaction and climate scores, (2) calculation of CRM for determination of significance of difference in satisfaction of teachers and their perceived institutional climate between institutions with high and low teacher participation scores.

Sample

It consisted of 50% random sample of teachers of 14 nursing and 18 teacher training institutions that are affiliated to 13 universities in India. The findings of the study reported in this paper are based on the responses of 32 principals/directors (14 nursing and 18 teacher training) and 64 faculty members (28 nursing and 36 teacher training) to the participation Scale, and 203 (94 nursing and 109 teacher training) faculty members drawn from the 14 nursing and 18 teacher training institutions of the 13 universities in India, who filled in the TAPE FORM B which included the Satisfaction items.

Testing the Hypotheses

Hypothesis 1 :—"The extent of participation available to teachers, their satisfaction with their institution, and their score on TAPE (Institutional Climate) in nursing institutions

will be significantly larger than those in teachers' colleges." While the basis for setting up the three hypotheses 2, 3 and 4 has been a number of studies in industrial and educational settings, there has been no such basis for formulating the hypothesis 1. This hypothesis was set up to test the observation of some people connected with both nursing and teacher training institutions that the nursing faculty is more committed to their profession and devoted to their institution than are those in the teachers' colleges and the surmise that the nursing faculty's share in administration might be a factor for their more commitment and devotion to the institution, in other words, their satisfaction with their institution and perception of better climate. The data however, do not wholly substantiate the observation of these people. From Table 1 it is observed that the nursing faculty do not significantly differ from their counterparts in the teachers' colleges in respect of the satisfaction they get from their institution and the type of climate they perceive in their institution, even though they differ significantly from one another on the extent participation is made available to them in their institution. The Mean of nurisng faculty participation score is significantly higher than that of faculty members of teachers' colleges. The '*t*' value of 2.28 is significant at .05 level but the 't' value of .81 and .10 between Satisfaction and Climate scores respectively in nursing and teacher training institutions are not significant, which suggest that the hypothesis of differential standing of the nursing and teacher training faculty on the three variables, Participation, Satisfaction and Perception of their Institutional Climate, can only be partially retained. Table 1 also indicates that nursing and teacher training faculty do not differ from one another on their perception of the four constituents of the college environment—College, Faculty, Students, and Administration, and if they differ from one another in respect of the extent of participation available to them, it is because of the availability of 'Structure for Participation' and 'Feel of Participation' in nursing institutions more frequently than in teacher training institutions. The Mean faculty participation score in nursing institutions on 'Participation Structure' dimension and 'Participation' 'Feel' or 'Climate' dimension are significanlty higher than those in teacher training institutions and though it is apparently higher also on 'Participation Process' dimension but the difference in their Means in the two groups of professional colleges is statistically not significant.

Table 1

MEAN, STANDARD DEVIATION AND 'T' VALUES OF TEN VARIABLES IN NURSING AND TEACHER TRAINING INSTITUTIONS

Variables	*Nursing*		*Teacher Training*		*'t'*
	Mean	*S.D.*	*Mean*	*S.D.*	
Process	139·53	17·143	122·92	34·569	1·64
Structure	58·856	7·359	48·185	10·084	3·32
Feel	35·571	3·844	30·231	5·928	2·92
Participation	233·96	24·737	201·33	48·675	2·28
Satisfaction	144·99	19·773	150·47	18·011	·81
College	181·93	25·226	182·63	19·956	·87 E-01
Faculty	187·89	26·252	186·58	26·916	·13
Students	179·28	26·632	177·68	18·983	·22
Administration	177·06	29·682	176·28	26·675	·78 E-10
TAPE	726·16	82·884	723·17	74·785	·10

Hypothesis : "Participation scores will be positively correlated with Satisfaction scores and that the teachers in institutions with high Participation scores will be more satisfied with their institution than those in institutions with low Participation scores." Like the findings of the researches on workers' participation and their satisfaction in industrial settings as well as on perceived teacher participation and their job satisfaction in some of the educational institutions in the western countries, the teachers' satisfaction in educational institutions has a significant bearing on the extent of participation available to the faculty members in the professional colleges, nursing and teacher training in India. The data uphold the hypothesis of positive relationship between participation and teachers' satisfaction for both the category of faculty members, nursing and teacher training separately as well as when taken together. The correlations between teacher Participation scores and their Satisfaction scores in each case, nursing, teacher training, and nursing and teacher training combined (.651, .780 and .585) respectively are significant at .01 level in each case except nursing where it is significant at '05 level. These significant correlations, on the one hand, suggest that increase in the availability of participatory role to teachers will necessarily increase their level of satisfaction with the institution, and on the other, are pointers at the desire and urge in teachers for recognition and status in the hierarchy of the functionaries of the institution. The relationship between recognition/status and participation is in proportion to the extent to which teachers participate in the total school process and activity including the administration of the institution, and teachers' involvement in the administration of their institution has something to do with their satisfaction, though it may not be the sole contributory factor in their satisfaction.

Although the Participation scores obtained from the use of the Participation Scale as a whole indicate significant positive relationship in each case, nursing, teacher training, and nursing and teacher training combined, the three components of the Participation Scale separately do not uniformly indicate this relationship. From the correlation matrices in Table 2, 3 and 4 it is observed that the correlations only between Participation scores on the Participation Process Continuum dimension and teachers' satisfaction in each case, nursing, teacher training and combined group of nursing and teacher training (.694 df 12, .758 df 16, .618 df 30) are significant. In other dimensions i.e. Structure for Participation and Feel of Participation, the correlation with teachers' satisfaction though in some cases are significant, in others though positive, are not significant. From this it is possible to conclude that among the three dimensions of the Participation Scale, only the Participation Process dimension has a definite bearing on the teachers' satisfaction, and the relationship of teachers' satisfaction with Participation score in the other two domensions is not so definite. These conclusions however, do not affect the retaining of the hypothesis of positive relationship of participation and teachers' satisfaction. They only suggest that the data on the Participation Process Continuum dimension should have been enough to study the relationship between participation and teachers' satisfaction.

The hypothesis of positive relationship between availability of partcipation and teachers' satisfaction with their institution is further reaffirmed when the data in Table 5 are examined with a view to test the hypothesis that teachers in institutions with high participation scores will be more satisfied than those in institutions with low Participation scores. The data suggest that the hypothesis be retained. Table 5 shows that there is significant difference between the Mean Satisfaction scores of the combined group of nursing and teacher training faculty in institutions with high and low 'teacher participation' scores, in each case whether the institutions are classified as high/low in terms of participation either by using Median or 27% top-bottom scores criterion. The 't' values of 3.23 and 2.79 between high and low 'teacher participation' institutions, when institutions are classified using Median and 27% top-bottom criterion respectively, are both significant. These findings suggest that the professional colleges (nursing and teacher training combined) as they are in Indian setting are though very much similar to industries and educational institutions in the western countries in their functioning and in the expectation of their share in administration, but they are different from the non-professional institutions of higher education in India, either in the manner of their administrative functioning and

Table 4

CORRELATION MATIRX FOR THE 10 VARIABLES IN THE COMBINED GROUP OF 32 NURSING AND TEACHER TRAINING COLLEGES

	1 *P*	2 *S*	3 *F*	4 *Pa*	5 *Sa*	6 *C*	7 *Fa*	8 *St*	9 *A*	10 *Cl*
1P	x	·822	·723	·978	·618	·230	·473	·368	·314	·433
2S	·822	x	·826	·914	·490	·286	·362	·300	·372	·415
3F	·723	·826	x	·827	·334	·300	·323	·270	·321	·380
4Pa	·978	·914	·827	x	·585	·266	·454	·360	·347	·447
5Sa	·618	·490	·334	·585	x	·154	·434	·375	·213	·364
6C	·230	·286	·300	·266	·154	x	·482	·521	·868	·894
7Fa	·473	·362	·323	·454	·434	·482	x	·549	·341	·740
8St	·368	·300	·270	·360	·375	·521	·549	x	·446	·752
9A	·314	·372	·321	·347	·213	·868	·341	·446	x	·836
10Cl	·433	·415	·380	·447	·364	·894	·740	·752	·836	x

satisfaction of faculty of non-professional colleges where the motivation for the demand for their involvement in administrative functioning of the college may also lie in interests other than their satisfaction.

This inference about the hypothesis drawn from the data for the combined group of nursing and teacher training institutions holds as good for two of the three dimensions of the Participation Scale (Process dimension and Structure for Participation dimension) as for the Scale as a whole. The 't' values of 5.05 and 2.55 between the Satisfaction scores on the same two dimensions respectively when institutions are classified as high/low 'teacher participation' using the 27% top-bottom scores criterion, are significant. The hypothesis however, does not seem to hold good for institutions classified as high/low 'teacher participation' on the basis of Particiaption score on the Participation 'Feel' dimension, in each case whether the institutions are classified high/low using Median or 27% top-bottom scores criterion. The 't' values of 1.21 and 1.41 are both not significant.

The analysis of data according to the two groups of professional colleges—nursing and teacher training, suggests differential effects of the variable of participation on teachers' satisfaction in the two types of professional colleges. While in teacher training institutions the data suggest that the hypothesis of significant difference between Mean Satisfaction scores in high and low 'teacher participation' institutions, whether they are classified on the basis of scores on the whole Participation Scale or on each of the three dimensions of the Scale, be accepted, the data for nursing institutions indicate that the hypothesis be competely rejected.

Table 5 shows that whereas all the 't' values 4.58 2.80, 2.48 and 3.85 between the Means of Satisfaction scores in teachers' colleges when they are classified as high/low on the basis of scores on the 'Process dimension', 'Structure for Participation dimension', 'Participation Feel dimension' and the Scale as a whole, are all respectively significant at .05 level, but none of the corresponding 't' values in the nursing institutions is significant. The differential effect of participation in the two groups of institutions suggests that unlike in the teachers' colleges, the urge for participation and the availability of participation to teachers are not necessarily tied up with the satisfaction of nursing faculty. But the fact that the Mean Satisfaction score of the nursing faculty is higher though not significantly in institutions classified as high 'teacher participation' than in that classified as low 'teacher participation', participation may have something to do with their satisfaction or dissatisfaction although the major source of their satisfaction in the institution may be as Avikian

(1971) and Morris (1973) also found, their feeling of achievement, recognition and work itself. And, in the case of the nursing faculty it is very likely that they seek satisfaction in the work itself, in doing it successfully and with a sense of achievement.

A member of the nursing faculty is basically a nurse. He or she has been trained as a nurse and is a member of the Trained Nurses Association of India. During his/her training and even as a faculty member he/she has to work in the hospital with patients sometimes directly and generally in association with students as their supervisor on the actual hospital job situation, and in doing so has learnt to recognize his/her crucial role not only in instilling the right kind of values and responsible attitude, but also in often successfully dealing with critical situations of the struggle between life and death. These feelings of achievement and of doing something worthwhile not for oneself but for others, may be stronger motivation for satisfaction in their work situation than the involvement in the work of the administration of their institution which may not have so direct an effect as the work itself in realizing one's worth.

Compared to the work situation the nursing faculty has been accustomed to and has the experience of meeting the challenges, the teachers' faculty works altogether in a different environment, and their role also not being so crucial as that of the nurses, there is no wonder that instead of seeking satisfaction wholly in their devotion to work, they seek it in their recognition and status in the administrative hierarchy. And, one of the ways to acquire a status is to participate in the running of the administration of the institution. If this analysis of the differential effect of teacher participation on their satisfaction in the nursing and teacher training institutions is taken as correct, then it is possible to conclude that though satisfaction by and large is related to the extent of participatory role teachers play in their institution, but the work situation itself is also a major determinant of teacher satisfaction.

Hypothesis 3 :—"Participation scores will be positively correlated with perceived Climate scores and that teachers in institutions with high Participation scores will perceive their institution's Climate more favourably than those in institutions with low Participation scores. In other words, the Perceived Climate scores in Institutions with high Participation scores will be significantly higher than in Institutions with low Participation scores." The climate of a social organization is a function of the dynamic interplay and interactions among the members of the organization and participation is a process of bringing about this interaction so that a group of people are brought together in working relationships in democratic setting. Since, one of the approaches to the domain of the climate of a social organization has been to encapsulate everything important to be said about the climate within the single global concept of morale, which according to Blankenship (1939) refers to a feeling of 'togetherness' and a sense of identification with and interest in the elements of one's job, working conditions, fellow workers, supervisors, employers and the company, and as participation also tends to bring about this feeling of 'togetherness' among people in an organization, there can be a close relationship between participation available to members in an organization and their perception of the climate of the organization. Whether or not there is such a relationship in the Indian professional college setting is being tested through the hypothesis of positive relationship between teacher participation and perceived institutional climate. There is need to test the above hypothesis as there are no direct studies to show the relationship between participation and climate, although there are studies (Wolf, 1971, Snyder, 1971, Beamer, 1969) which have shown positive relationship between teacher participation and teacher morale.

That the hypothesis of positive relationship between teacher participation and perceived institutional climate should be accepted is obvious from the correlation matrices (Tables 2, 3 and 4). The correlations of .556 df 12, .484 df 16, and .447 df 30 between teacher participation scores and the perceived climate scores obtained by the use of TAPE in the nursing, teacher training and combined group of nursing and teacher training institutions respectively are significant at '05 level and suggest that greater the availability of participation to teachers in the professional colleges, better and more favourable is the teachers' perception of the climate of their institution. These findings are in accord with the findings

Table 5

MEAN, STANDARD DEVIATION AND 'T' VALUES OF SATISFACTION SCORES OF TEACHERS IN INSTITUTIONS WITH HIGH AND LOW TEACHER PARTICIPATION SCORES USING MEDIAN AND 27% TOP-BOTTOM SCORES FOR CLASSIFICATION OF INSTITUTION IN THE TWO CATEGORIES

Institutions	*High Participation Satisfaction Scores*				*Low Participation Satisfaction Scores*			
	Median Criterion				*Median Criterion*			
	P	*S*	*F*	*Pa*	*P*	*S*	*F*	*Pa*
Nursing								
Mean	154·94	147·74	141·33	125·07	135·04	142·24	148·66	137·91
S.D.	16·246	13·503	11·404	17·481	17·89	24·177	25·001	13·393
't'	2·17	·52	·70	1·43	2·17	·52	1·70	1·43
Teacher Training								
Mean	163·69	161·58	160·67	162·58	137·24	141·57	142·30	138·35
S.D.	9·394	13·522	12·020	10·225	14·521	16·117	17·845	15·831
't'	4·58	2·80	2·48	3·85	4·58	2·80	2·48	3·85
Combined								
Mean	157·51	155·34	152·07	157·51	138·64	140·81	144·08	138·64
S.D.	14·594	15·573	15·102	14·594	18·189	19·332	21·49	18·189
't'	3·23	2·34	1·21	3·23	3·23	2·34	1·21	3·23
	27% Top-Bottom Criterion				*27% Top-Bottom Criterion*			
Combined								
Mean	164·56	154·78	150·65	157·05	131·88	134·26	138·23	133·67
S.D.	9·134	15·919	15·474	17·232	18·270	19·829	23·099	20·050
't'	5·05	2·55	1·41	2·79	5·05	2·55	1·41	2·79

Symbols : P—Process Dimension, S—Structure for Participation Dimension, F—Participation Feel Dimension, Pa—Participation Scale as a Whole

of studies on morale in business enterprises (Katz, 1949, Bavelas, 1942, Levine and Butler, 1952, Roethlisberger, Dickinson and others, 1939, 1950, Maccoby, 1949 and Lewin 1949) and in educational institutions (Wolf, 1971, Snyder, 1971, Beamer, 1969).

Further analysis of the correlations matrices in relation to the three dimensions of the participation measuring instrument in the three groups separately however, do not suggest that the hypothesis of positive relationship between teacher participation and their perception of institutional climate can hold true in all cases when teacher participation score is not an aggregate of the scores on the three dimensions of the participation measuring instrument, but are the scores on the three dimensions considered separately. But the fact that teacher participation scores on each of the three dimensions yield significant positive correlation with the teachers' perceived climate scores in the combined group of nursing and teacher training institutions and in nursing and teacher training institutions separately

on some dimensions significant and on some not significant, but positive correlations suggest the possibility that the number of observations has to do something with the value of correlation and if the number of observations were larger in the other two cases also, the correlations in these cases also should have been significant, specially when each of the three dimensions of the Participation Scale is highly correlated with the scale as a whole, and then the hypothesis of positive relationship between participation and perceived climate in these cases also could be retained.

Like the three dimensions of the Participation Scale, the four components of the TAPE also do not help in drawing uniform conclusions regarding relationship of Participation scores with the scores on the four components of the TAPE separately in the three groups of institutions. The data show that whereas the teacher participation scores are significantly and positively correlated with the scores on the 'Faculty' and 'Student' component of the TAPE in the nursing and combined group of nursing and teacher training institutions, it is significantly correlated with the scores on only the 'Administration' component of the TAPE in the teacher training institutions, and in this case the data do not suggest that the increase in the number of observations would make any difference in the pattern of findings.

Further support for the acceptance of the hypothesis of positive relationship between the availability of participation to teachers and their perception of the climate of their institution is obtained when the data in Table 6 is examined with a view to test the hypothesis that teachers in institutions with high participation scores will perceive the climate of their institution more favourably than those in institutinos with low participation scores, or in other words, high 'teacher participation' institutions will produce higher climate scores than low 'teacher participation' institutions. Table 6 shows that there is a significant difference between the Mean Climate scores of the combined group of nursing and teacher training faculty in institutions with high and low 'teacher participation' scores, in each case whether the institutions are classified as high/low in terms of participation by using Median or 27% top-bottom scores criterion. The 't' values of 4·78 and 5·50 between Climate scores of high and low 'teacher participation' institutions, when institutions are classified using Median and 27% top-bottom criterion respectively, are both significant at ·01 'evel.

The conclusion about the retaining of the hypothesis drawn from the data for the combined group of nursing and teacher training institutions holds good for the four components of the TAPE as well, the College, Faculty, Students and Administration. The 't' values of 3·23, 2·87, 4·26, and 3·10 between the Climate scores on the 'College', 'Faculty', 'Students' and 'Administration' component of the TAPE respectively when institutions are classified as high/low 'teacher participation' using the Median criterion, and the 't' values of 2·74, 5·00, 4·72, and 3·04 for the Climate scores on the same four components respectively when institutions are classified as high/low 'teacher participation' using 27% top-bottom scores criterion, are all significant at ·01 level except the 't' value of 2·74 on the 'College' component when institutions are classified in the two categories using 27% top-bottom criterion, which is significant at ·05 level.

The analysis of data according to the two groups of professional colleges, nursing and teacher training, suggests as in respect of the teachers' satisfaction, differential effect of the variable of participation in the two types of professional colleges. As for satisfaction, the data suggest that the hypothesis of significant difference between Mean Climate scores in high and low 'teacher participation' training institutions be accepted, but it should be rejected in the nursing institutions. Table 6 shows that the 't' value of 3·06 between Mean TAPE scores of high and low 'teacher participation' teacher training institutions is significant at ·01 level, but that the corresponding 't' value in nursing institutions is not significant. However, unlike the differential effect of the variable of teacher participation on the TAPE score in the nursing and teacher training institutions, the scores on the four components of the TAPE in the two categories do not relatively show that much of the differential effect. The data show that except in the case of the component 'Administration', the effect of the variable of teacher participation on the teachers' perception of their 'College', 'Faculty', and 'Students' in both the categories of institutions is the same in the sense

that if the difference between the Mean score on a component is significant or not significant between high and low 'teacher participation' nursing institutions, then it is likewise significant or not significant in teacher training institutions as well. The differential effect of the availability of teacher participation on the teachers' perception of their institution's climate suggests that : (i) availability of teacher participation is not perceived an equally important determinant of the institution's climate in the two categories of professional colleges, (ii) in teahcers' colleges availability of participation to teachers will have positive influence on the preception of the climate of their college as good or congenial, and (iii) in nursing colleges, climate is perceived good or bad, congenial or uncongenial more for reasons other than the availability of participation or share in administration of the institution, and may be, as with their satisfaction, the reason may lie in the process of their work itself.

Hypothesis 4 : "There will be positive relationship between perceived institutional climate and satisfaction of teachers and that teachers in institutions with high satisfaction scores will perceive the climate of their institution more favourably than those in institutions with low satisfaction scores." Among the five studies of correlates of Satisfaction with the institutional Environment, two (Pervin, 1967; Berdie et al., 1970) deal with students' satisfaction and three (Taylor, 1968, Smith, 1974; and Bruce, 1974) are concerned with the study of the relationship of teachers' satisfaction with perceived institutional climate. As in these studies, the ratings of satisfaction with job/college are found to be related with the ratings of college environment in the present study also. From the correlation matrix (Table 4) it is observed that the correlation of ·364 df 30 between the Mean Satisfaction scores and the Mean TAPE scores in the combined group of 32 nursing and teacher training institutions is significant at ·05 level and this suggests that the hypothesis: 'Perception of the institutional environment will have direct bearing on teachers' satisfaction with the institution,' should be retained. However, all the four aspects or components of institutional environment included in the TAPE instrument are separately not significantly related to teachers' satisfaction. Significant correlation with teachers' satisfaction are noted in only two of the four components viz. perception of 'Faculty' and perception of 'Students'. Perceptions of 'Administration' and 'College' are not significantly related with teachers' satisfaction. Although Taylor's (1968) also rejected the hypothesis of positive relationship with five out of the eight aspects of institutional environment, but contrary to the findings of the present study, Taylor (1968) reported instructor's evaluation of (i) Board's interest in the institution and the faculty, (ii) Relation with administration, (iii) Administrative policies and practices, as the most important single environmental factor in predicting faculty job satisfaction, and relation with faculty colleagues as not significantly related to faculty job satisfaction. Bruce's (1974) finding that perceptions of job satisfaction and perceptions of organizational bureaucracy are significantly related also runs counter to the findings of the present study. One conclusion that emerges from these somewhat contradictory findings is that whereas the source for teachers' ssatisfaction with their institution in India lie more in their friendly and positive relationship with their faculty colleagues and students than in their relation with administration and perceptions of administrative policies and practices, the American teacher feels satisfied or dissatisfied with his institution depending more on the kind of relation he has with the administration and on his perception of the administrative policies and practices of his institution than his rapport with his faculty colleagues and his students.

The hypothesis of significant positive relationship between teachers' satisfaction with the institution and the perceived institutional climate is though upheld in the combined group of 32 nursing and teacher training institutions, it tends to be completely rejected in both the nursing and teacher training institutions, when considered separately. Correlations of ·294, ·046, ·482, ·515 and —·018 (Table 2) between teacher satisfaction scores and the scores on TAPE and the four components of TAPE, 'College', 'Faculty', 'Students', 'Administration', respectively in the 14 nursing institutions are not significant. Similarly, correlations of ·443, ·270, ·411, ·258, and ·441 (Table 3) between teacher satisfaction scores and the scores on TAPE and the same four components of the TAPE in the 18 teacher

Table 6

MEAN, STANDARD DEVIATION AND 'T' VALUES OF CLIMATE SCORES AS GIVEN BY TEACHERS IN INSTITUTIONS WITH HIGH AND LOW TEACHER PARTICIPATION SCORES USING MEDIAN AND 27% TOP-BOTTOM SCORES FOR CLASSIFICATION OF INSTITUTIONS IN THE TWO CATEGORIES

Institutions	*High Participation Climate Scores*					*Low Participation Climate Scores*				
	Median Criterion					*Median Criterion*				
	C	*F*	*S*	*A*	*T*	*C*	*F*	*S*	*A*	*T*
Nursing										
Mean	187·48	202·30	189·59	179·63	759·00	176·37	173·48	168·91	154·50	693·33
S.D.	23·748	16·049	10·868	32·933	39·438	25·436	26·560	24·602	25·776	100·13
't'	·84	2·45	2·02	·32	1·61	·84	2·45	2·02	·32	1·61
Teacher Training										
Mean	190·91	199·94	183·58	192·53	766·96	174·34	173·22	171·78	160·03	670·38
S.D.	19·113	29·824	21·969	25·724	72·599	17·144	14·223	12·981	15·282	45·593
't'	1·93	2·42	1·386	3·25	3·06	1·93	2·42	1·386	3·25	3·06
Combined										
Mean	192·49	203·18	188·09	191·38	775·14	172·16	171·13	168·67	161·86	673·82
S.D.	21·058	23·594	17·711	28·500	54·568	18·839	18·674	17·715	17·996	64·779
't'	2·87	4·26	3·10	3·50	4·78	2·87	4·26	3·10	3·50	4·78
	27% Top-Bottom Criterion					*27% Top-Bottom Criterion*				
Mean	193·26	207·35	192·09	187·34	780·05	168·93	171·25	167·48	156·11	663·77
S.D.	22·127	16·938	10·250	30·074	47·700	17·205	15·219	12·887	12·075	46·671
't'	2·74	5·00	4·72	3·04	5·50	2·74	5·00	4·72	3·04	5·50

Symbols : C—College, F—Faculty, S—Students, A—Administration, T—TAPE

training institutions, are not significant. The not-significant correlations when the two groups of institutions are considered separately, but significant correlations when the institutions are combined, and as a result the number of observations are increased, may though appear paradoxial, but to a large extent it explains the distortions in the findings. From the findings it is obvious that the value of correlations are a great deal related to the number of observations taken for computing correlation and since the number of observations in the nursing and teacher training institutions considered separately is relatively small, account for the not-significant correlations. Perhaps, and this could be a problem of further inquiry, if the number of observations in the two categories of institutions could be increased, they would also have yielded significant correlations and contributed to the accepting of the hypothesis.

In the attempt to seek further support to the findings obtained from the computation of correlations, when the data in Table 7 is examined to test the hypothesis that teachers in institutions with high 'teacher satisfaction' scores will perceive their institution's climate more favourably than those in institutions with low 'teacher satisfaction' scores, it is found that the findings are exactly similar to that obtained from the analysis of correlations in the combined group of nursing and teacher training institutions, when Median is used as a basis for classifying institutions in the two categories—high and low 'teacher satisfaction' institutions. The findings however, are not supported when the 't' values between the Climate scores of high and low 'teacher satisfaction' institutions, using 27% top-bottom scores criterion for classifying institutions in the two catgegories, are considered. Table 7 shows that the 't' values of 2·34 between Mean TAPE scores and of 2·64 and 2·13 between Mean scores on 'Faculty' and 'Students' component respectively of TAPE in the high and low 'teacher satisfaction' institutions, when Median is used for classifying the institutions in the two categories, are significant, but none of the 't' values between scores on TAPE and its four components in high and low 'teacher satisfaction' institutions when 27% top-bottom criterion is used for classifying the institutions in the two categories, is significant. There is no doubt that the differential effect of 'teacher satisfaction' on the 'Climate' scores of institutions classified as high and low 'teacher satisfaction' institutions by the two methods of classification of institutions—Median and 27% top-bottom scores, raises some difficulty in accepting the hypothesis of significant difference in the perceived climate of institutions between high and low 'teacher satisfaction' institutions, but the fact that correlations between teacher satisfaction and perceived climate scores are found significant, there is enough reason to retain the hypothesis with the reservation that further verification should be attempted with a larger sample of institutions so that the number of institutions in the two categories, when institutions are classified as high and low, is significantly increased.

The analysis of data according to the two groups of professional colleges, nursing and teacher training, shows that there is significant difference between the two categories of institutions in respect of the bearing teacher satisfaction scores has on the teachers' perception of their institution's climate. While the findings in nursing institutions are completely in accord with the findings for the combined group of nursing and teacher training institutions, they are completely at variance in the teacher training institutions. Table 7 shows that whereas none of the 't' values between Mean scores on the TAPE and its four components in high and low 'teacher satisfaction' institutions of teacher training is significant, but they are significant in the nursing institutions in respect of the Mean TAPE scores and the scores on the 'Faculty' and 'Students' components of the TAPE. Again, in the context of there being no significant correlation between teacher satisfaction and teachers' perception of their institution's climate in both nursing and teacher training institutions, and there being a significant difference in the nursing faculty's perception of their institutional climate (in three of the five variables used for assessing the climate) between high and low 'teacher satisfaction' institutions, and there being no significant difference on these variables high and low 'teachers satisfaction' teacher training institutions, no definite conclusion with respect to acceptance or rejection of the bearing

Table 7

MEAN, STANDARD DEVIATION AND 'T' VALUES OF CLIMATE (TAPE) SCORES AS GIVEN BY TEACHERS IN INSTITUTIONS WITH HIGH AND LOW TEACHER SATISFACTION SCORES USING MEDIAN AND 27% TOP-BOTTOM SCORES FOR CLASSIFICATION OF INSTITUTIONS IN THE TWO CATEGORIES

	High Satisfaction Climate Scores					*Low Satisfaction Climate Scores*				
	Median Criterion					*Median Criterion*				
	C	*F*	*S*	*A*	*T*	*C*	*F*	*S*	*A*	*T*
Nursing										
Mean	192·29	202·96	194·29	182·84	772·39	171·56	172·82	164·27	171·29	679·94
S.D.	24·549	16·392	7·615	33·684	38·323	21·334	25·601	20·674	23·680	89·421
't'	1·68	2·62	3·60	·742	2·51	1·68	2·62	3·60	·742	2·51
Teacher Training										
Mean	182·82	194·92	178·68	184·11	740·53	182·44	178·24	176·68	168·45	705·81
S.D.	23·185	31·206	22·928	29·542	84·385	16·089	18·330	13·893	20·685	58·838
't'	·40	1·38	·22	1·30	1·01	·40	1·38	·22	1·30	1·01
Combined										
Mean	186·96	198·44	185·51	183·55	754·47	177·68	175·87	171·25	169·69	694·49
S.D.	24·251	26·100	19·520	31·427	69·987	19·335	21·976	18·262	22·090	74·903
't'	1·19	2·64	2·13	1·44	2·34	1·19	2·64	2·13	1·44	2·34
	27% Top-Bottom Criterion					*27% Top-Bottom Criterion*				
Combined										
Mean	182·65	197·91	187·84	181·95	751·35	178·66	179·68	172·25	167·32	697·91
S.D.	26·991	27·286	21·803	36·997	78·144	12·686	15·890	11·215	17·020	47·887
't'	·52	2·82	1·01	1·13	1·84	·52	1·82	2·01	1·13	1·84

Symbols : C—College, F—Faculty, S—Students, A—Administration, T—TAPE

of teacher satisfaction on teachers' perception of their institution's climate in the two categories of institutions is made even though at least in teacher training institutions the use of both correlations as well as the 't' values suggest that the hypothesis should be rejected. But as stated earlier further verifications are needed with use of larger sample of institutions to arrive at a more specific and definite generalization.

References

1. Avikian, Nancy A. An analysis of factors relating to job satisfaction and dissatisfaction of faculty members in institutions of higher education. *Dissertation Abstracts,* 1971, 32 (4–A).
2. Bavelas, A. 'Morale and training of leaders' in G. Watson (ed) *Civil Morale.,* Houghton Mifflin Company, 1942 pp. 143–65.
3. Beamer, John Lee. The relationship of administrative leadership practices to teacher morale in public elementary schools. *Dissertation Abstracts,* 1970, 31 (2–A) 574.
4. Berdie, Ralph F., Pilapil, Bonifacio and Im, In Jae. 'Entrance correlates of university satisfaction', *American Educational Research Journal,* 1970, 7(2), 251–266.
5. Blankenship, A.B. 'Methods of measuring industrial morale' in G.W. Hartmann and T. Newcomb (eds) *Industrial Conflict.,* The Cordon Co., 1939, 299–312.
6. Bruce, Mckenna J. A study of the relationship between teachers' perception of job satisfaction and of organizational bureaucratization in public schools. *Dissertation Abstracts,* 1974, 35, 3 (AB).
7. Katz, D. 'Morale and motivations in industry' in *Currents Trends in Industrial Psychology,* University of Pittsburgh Press, 1949, 145–171.
8. Levine, J., Butler, J. 'Lecture vs Group Decision in Changing Behaviour' *J. Appl. Psychol.,* 1952, 36, 29–33.
9. Lewin, K. 'Group decision and social change' in T.N. Newcomb and E.L. Hartley (eds) *Readings in Social Psychology,* Henry Holt and Co., 1949, 330–344.
10. Maccoby, N. 'Research findings on productivity, supervision and morale' in *Research on Humans Relations in Administration.* University of Michigan : Institute for Social Research (Mimeographed Report) March 11, 1949.
11. Morris, John Vincent. Factors influencing job satisfaction/dissatisfaction among faculty in selected private liberal arts colleges. *Dissertation Abstracts,* 1973, 33(7–8A).
12. Pervin, Lawrence A. 'Satisfaction and perveived self-environment similarity : a semantic differential study of student college interaction' *Journal of Personality,* 1967, 35(4), 623–634.
13. Roethlisberger, F.J., Dickinson, W.J. *Management and the Worker,* Harvard University Press., 1939, 10th printing, 1950.
14. Smith, Paul Joseph. An investigation of the relationship between teacher satisfaction and organizational climate in selected elementary schools. *Dissertation Abstracts,* 1974, 34, 7 (AB).
15. Snyder, William Carroll. Morale as an effect of teachers' perception of their role in educational decision-making. *Dissertation Abstracts,* 1972, 32 (11–A).
16. Srivastava, R.C. *Student Participation in Administration* (The Study of Teacher Training Institutions) Sterling Publishers 'P' Ltd., New Delhi, 1975.
17. Srivastava, R.C. 'Teachers' and Students' participation in college administration', J.H.E., Vol. 3 No., 2, Autumn, 1977.
18. Srivastava, R.C. 'Faculty and student status in administration' J.H.E., Vol. 4, No. 2, Autumn, 1978.
19. Srivastava, R.C. 'Participation practices and faculty and student satisfaction' *EPA Bulletin,* Vol. 2 No. 2 July, 1979.
20. Taylor, Fredrick A. Institutional environmental factors that effect junior college faculty job satisfaction in selected public colleges of Texas. *Dissertation Abstracts,* 1968, 28 (10–A), 3954.

R.C. Srivastava

ABILITIES AND SUBJECT SPECIALIZATION

Four hundred and eighty nine college graduates from various disciplines, arts, languages, mathematics, Engineering and Sciences—both boys and girls sat for a common entrance examination for Post-Graduate admission. This entrance examination comprised a standardised battery of seven ability tests in

(a) language usage
(b) verbal reasoning
(c) abstract reasoning
(d) numerical ability
(e) reading comprehension
(f) spatial relationship, and
(g) speed and accuracy.

The situation provoked the following questions :

(1) What is the relationship between subject specialization in the undergraduate courses and the achievement in the various ability tests ?

(2) Do language students have significantly higher linguistic ability than the other students ?

(3) Do Science students significantly differ from the other groups of students in some specific reasoning ability ?

(4) Do Mathematics students significantly differ from the other students in numerical ability ?

(5) Do commerce students significantly differ from the other students in any ability ?

(6) Do students who have studied Science/Mathematics significantly differ from those who have studied Arts/Languages ?

(7) Do students who have done Engineering differ significantly from the other groups of students in any specific ability ?

(8) Do students of the various branches of Arts have similar profiles in terms of their abilities ?

(9) Do students of the various branches of Science/Maths/Technology have similar profiles in terms of their abilities ?

(10) Do the students with P.G. qualification differ significantly from the other students?

Aptitude/ability tests have been used as tools to predict the scholastic achievement by Desai (1954) Ahuja (1961) Mehrotra (1972) and Ray (1972). positive correlation between scholastic achievement and aptitude has been reported by Pande (1978). Palkar (1973) has compared the proficiency of students of Mathematics and English in numerical ability.

Analysis

The total sample of 489 graduates represented 11 disciplines and all the candidates with P.G. degree were put in one group. The ratio of male to female graduates was 10:1. The majority of the students were from Tamil Nadu and a few were from the neighbouring states such as Kerala and Karnataka. The age of the subjects varied, the average clustering around 23 plus.

Raw scores of the inventory were tabulated, the total scores were averaged, with S.D. and variance and using S.D. and variance 't' scores were calculated to find out the significance of difference between Means.

Table 1 gives the distribution of the mean scores obtained by the candidates belonging to the various disciplines.

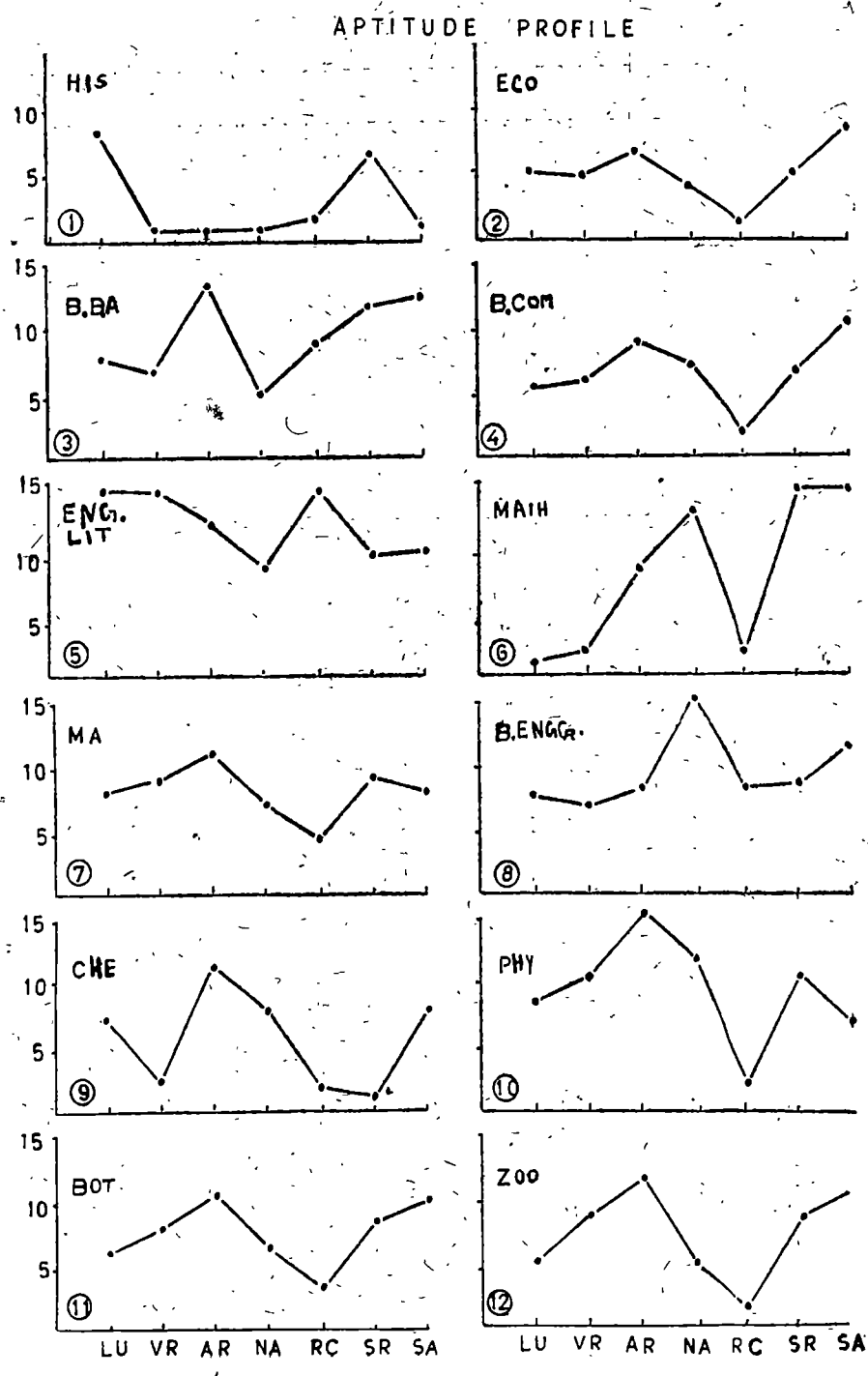

APTITUDE PROFILE
HIS
ECO
B.BA
B.Com
ENG. LIT
MATH
MA
B.ENGG.
CHE
PHY
BOT
ZOO
15
10
5
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫
LU VR AR NA RC SR SA

Table 1

	Discipline	*Score*
1.	(B.A.) English language Literature	170·91
2.	(B.E.) Engineering	166·0
3.	(B.B.A.) Business Administration	156·6
4.	(B.Sc) Physics	150·97
5.	(B.Sc) Chemistry	150·38
6.	(B.Sc) Mathematics	149·93
7.	(B.Com) Commerce	147·15
8.	(B.Sc) Zoology	146·68
9.	(B.Sc) Botany	144·53
10.	(B.A.) Economics	134·33
11.	(B.A.) History	106·6
12.	(M.A.) Post graduates	152·57

It is seen that the highest mean for the whole test is obtained by the graduates in English Literature and the lowest by graduates in History, the Sciences ranking from 4th to 9th position. The Figs. 1 to 12 give the profile of each group, ability wise.

Profiles

The profiles of mathematics and Engineering graduates exhibit similar pattern of peaks and dips. (Fig. 16).

All the science graduates of all the branches—physics, chemistry, Botony and Zoology are superior to the others in their abstract reasoning ability and significantly lower in their reading comprehension ability (figs. 13 & 14).

The graduates of History and Commerce also are low in their reading comprehension. (figs. 11 & 4).

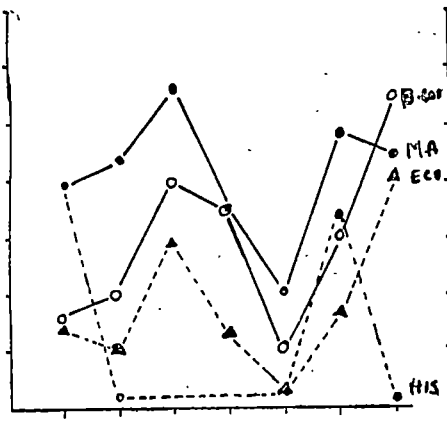
The History graduates occupy the second position in language usage but have scored poorly in verbal reasoning and comprehension. It is strange that the students with post graduate qualification have not scored better in any of the abilities than the graduates (fig. 7).

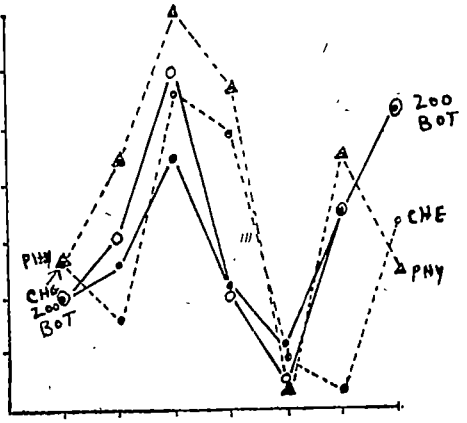
The general performance of Arts graduates is found to be better than the science graduates in the areas of language usage, verbal reasoning and reading comprehension (fig. 18). Similarly, the general performance of the Science graduates (including Mathematics and Engineering) is better than the Arts graduates in the four categories of abilities abstract reasoning, numerical ability, spatial realtionship and speed and accuracy (figs. 14 and 16).

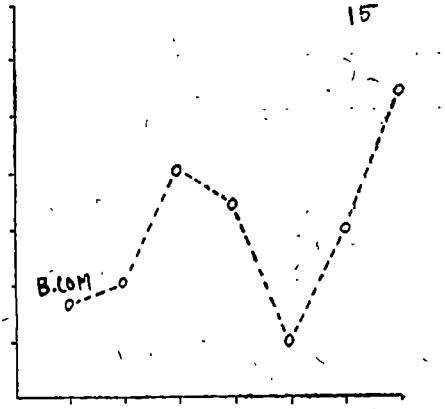
The profile pattern of English Literature group and the mathematics group—the peaks and the dips—is typical of graduates of all Arts put together and all sciences put together. Excepting for the abstract reasoning ability, the distribution pattern of the abilities are very typical, the arts graduates excelling in language usage, verbal reasoning and reading comprehension and the Science graduates excelling in numerical ability, spatial relations and speed and accuracy. (Fig. 17).

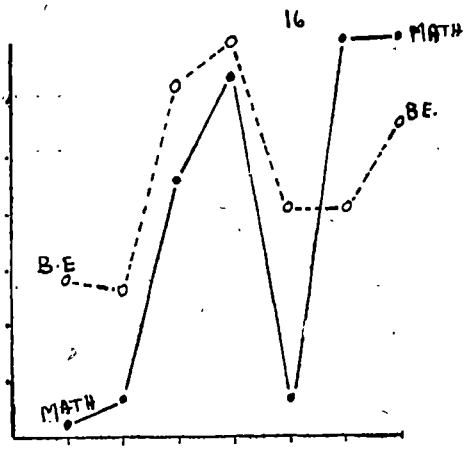
Analysis—Ability wise

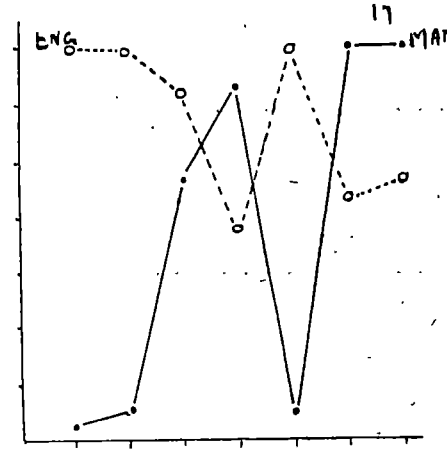
Graduates of English Literature are found to be superior to all other students in Reading comprehension and in verbal reasoning. Regarding language usage the difference is not significant.


B.COM
MA
A ECO
HIS


ZOO
BOT
CHE
PHY
PHY
CHE
ZOO
BOT


15
B.COM


16
MATH
B.E.
B.E
MATH


17
ENG
MATH

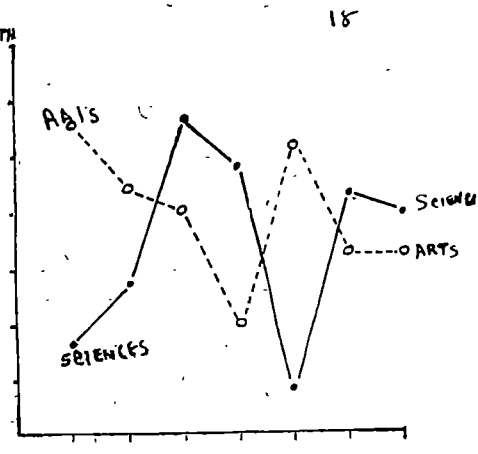

18
ARTS
SCIENCES
SCIENCE
ARTS

Table showing distribution of 't' values between graduates of English literature and other students.

Ability	*'t' value*	*Significant Level*
Reading Comprehension	2·66°	·05
Verbal Reasoning	11·28°	·05
Language usage	1·75°°	·05

°significant.
°°Not significant.

Reasoning—Abstract & Spatial

Science students differ significantly from the other group of students in their abstract reasoning and spatial abilities.

Table showing the distribution of 't' value between science students and other students.

Ability	*'t' Value*	*Significant Level*
Abstract reasoning	9·94°	·05
Spatial ability	7·27°	·05

°*Significant*

Numerical Ability

Mathematics students differ significantly from the other groups of students in Numerical ability.

Table showing the distribution of 't' values between Maths students and other students.

Ability	*'t' Value*	*Significant Level*
Numerical ability	10·36°	·05

°*Significant*

Commerce students do not differ significantly from the other students in any ability.

Science Students Vs Humanity Students

Science students difier significantly from the Humanity students in certain abilities They are, language usage, numerical ablity, and speed and accuracy. Gumanity student. perform significantly better than the science students in reading comprehension ability.

Table showing the distribution of 't' values between Science students and Humanity students.

Ability	*'t' Value*	*Significant Level*
1. Language usage	4·17°	·05
2. Verbal Reasoning	0·68°°	·05
3. Abstract reasoning	9·94°	·05
4. Numerical ability	10·54°	·05
5. Reading Comprehension	32·22°	·05
6. Spatial relationship	7·27°	·05
7. Speed and accuracy	1·59°	·05

°*Significant.*
°°*Not significant.*

Engineering Students

They differ significantly from the other groups of students in the Numerical Ability.

TABLE SHOWING THE DISTRIBUTION OF 't' VALUE

Ability	*'t' value*	*Significant level*
Numerical ability	5·51°	·05

°*Significant*

Post Graduate students vs graduate students

Post graduate students differ significantly from graduate students in verbal reasoning, Numerical Ability, and also in speed and accuracy.

They do not differ significantly in language usage, abstract reasoning, reading comprehension and spatial relationship.

TABLE SHOWING THE DISTRIBUTION OF 't' VALUE

Ability	*'t' value*	*Level of significant*
1. Language usage	0·28°°	·05
2. Verbal reasoning	2·26°	·05
3. Abstract reasoning	1·58°°	·05
4. Numerical Ability	4·17°	·05
5. Reading Comprehension	0·75°°	·05
6. Spatial relationship	1·86°°	·05
7. Speed and accuracy	2·61°	·05

°*Significant*
°°*Not significant*

True, the subject specialization of the learner is mostly an expression of the degree of attachment of the learner towards the subject.

The selection of subjects when our students join colleges is arbitrary and not based on any aptitude testing. But the study does reveal that those who have chosen the various subject specializations have developed the specific intended abilities through the academic expressions they have had in the colleges—we are not aware whether these students did or did not have the necessary aptitude level at the beginning of the course.

We have to agree with Anastasi (1961) in explaining the high achievement of English language literature students—that the superior verbal ability gives advantage to the students of English in answering the sub categories of the test battery.

J.K. Pillai and J. Gabriel

AGRICULTURAL RESEARCH SERVICE SCIENTISTS : THEIR VALUE ORIENTATION AND OVERALL MODERNITY

The effectiveness of a research organisation depends upon the quality and quantum of work done by its scientists. The scientists inturn have to be effectively helped by technical, administrative and supporting personnel. Only when every one in the system functions in a harmonious manner like members of a symphony orchestra, the return from investment in research increase. The personnel policies of a research organisation, therefore, have to be so oriented as to serve the specific needs of that organisation. Keeping this in mind the Indian Council of Agricultural Research (ICAR) decided to restructure its personnel policies towards all the categories of staff—scientific, technical, administrative and supporting. For scientific staff, an Agricultural Research Service (ARS) was started from October 2, 1975. And majority of the existing scientists have been inducted in this newly formed Agricultural Research Service. Also new recruitment has been started since 1976 through All India ARS Examination. The scientists those are in that service are called Agricultural Research Service Scientists and they are the subject of this present study.

A scientist, first of all, is an individual. So the quality and quantum of his research work will be very much dependent on his socio-psychological behaviour in the form of his attitude, belief, skill and values. Efficiency and effectiveness of his work will be affected if his said behaviour do not flow in desired direction. Particularly value orientation and over-all modernity of the individual play a significant role in determining his characteristics in relation to his work for which he is assigned. Considering these facts present researcher took up this study to find out particularly those two important socio-psychological traits namely, value orientation and overall modernity of Agricultural Research Service Scientists working in various ICAR Institutes in different parts of India.

Methodology

The *value-orientation* (fatalism—scienticism) is a dimension of values in the Man—Nature Orientation. Here, the concept of fatalism has been defined as a belief that human situations and acts are predetermined by some supernatural power and can never or little be influenced by individual volition or by act of any one else. On the other hand scienticism has been defined as a belief that situations are the result of natural and/or social forces which can be understood and changed by human volition or by human action. And the value orientation of the Agricultural Research Service Scientists was studied on fatalism—scienticism dimension developed by Chattopadhyay (1963). The criteria of scoring was conceptually unidimensional. High scores in the scale indicated high degree of fatalism.

As regard to *overall modernity* in this study modernity has been conceptualised as predisposition towards change from traditional to a modern way of life. Overall modernity scale developed by Inkeles (1967) was used by the Indian Institute of Mass Communication

(1968) in its "Communication Study of National Integration and Secularism". This overall modernity scale was used in the present study to measure the overall modernity of ARS Scientists working in ICAR Institutes.

The other background information which are having relevance with their value orientation and overall modernity like age, education, religion, family type, family size, annual income and experience (total years of service) of the scientist respondents have also been studied in this regard. The study was conducted in National Academy of Agricultural Research Management, Rajendranagar, Hyderabad where the ARS Scientists of ICAR came for undergoing training on Agricultural Research Management during December, 1981 to February, 1982.

Sixty-six scientists of S-1 grade belonging to different disciplines of Agriculture, Animal Husbandry and Fishery Sciences of 12 different ICAR Institutes had been selected as sample for the present study. Necessary data were collected from these 66 scientists through the structured questionnaire specially made for this study.

Results and Discussions

The background information of scientists like age, education, religion, family type and size, annual income and total years of service experience were collected through questionnaire from the 66 selected respondents and presented in Table 1 and 2 after computation.

Table 1

DISTRIBUTION OF RESPONDENTS IN RELATION TO THEIR AGE, RELIGION, FAMILY TYPE, FAMILY SIZE AND ANNUAL INCOME

Characteristics	*No. of Respondents* N 66	*Per cent*
A. *Age in completed years*		
(a) Upto 30	1	1·516
(b) 21 to 40	26	39·400
(c) 41 to 50	35	53·020
(d) 51 to 60	4	6·064
B. *Religion*		
(a) Hindu	60	90·904
(b) Muslim	4	6·064
(c) Christian	1	1·516
(d) Jain	1	1·516
C. *Family type*		
(a) Nucleus	39	59·083
(b) Joint	27	40·917
D. *Family size*		
(a) Upto 5 members	43	65·146
(b) 6 members and above	23	34·854
E. *Annual income*		
(a) Upto Rs. 15,000	2	3·031
(b) Rs. 15,001 to Rs. 20,000	26	39·401
(c) Rs. 20,001 to Rs. 25,000	36	54·537
(d) Rs. 25,001 to Rs. 30,000	2	3·031

Table 2

DISTRIBUTION OF RESPONDENTS IN RELATION TO THEIR EDUCATIONAL BACKGROUND AND TOTAL YEARS OF SERVICE EXPERIENCE

Characteristics	*No. of Respondents* N=66	*Per cent*
A. *Educational background*		
(a) Masters' degree (M.Sc./M.V.Sc./M.Sc. (Ag.)	41	62·115
(b) Doctorate Degree (Ph.D/D.Phill/D.Sc.)	25	37·885
B. *Total years of service experience*		
(a) Upto 10 years	17	25·760
(b) 11—20 years	34	51·500
(c) 21—30 years	15	22·740

It was evident from the Table 1 that a larger part of the respondents (53 per cent) belonged to the older age group (of 41–50 years) and Hindu religion (90·9 per cent). The table also revealed that out of 66 respondents 39 (59 per cent) were having nucleus family and 43 (65 per cent) scientists each had only 5 or less number of family members. But interestingly table showed that all most all the respondents (94 per cent) belonged to the higher income group Rs. 15001/- to Rs. 25,000/- per annum).

Similarly, Table 2 revealed that all the respondents were having minimum Master's degrees as their educational status and 25 of them (37·88 per cent) were having Doctorate degrees too. It was also seen from the table that 51·5 per cent respondents have already put 11 to 20 years of services in their respective fields. And 22.74 per cent scientists were having even 21–30 years of service experience. The minimum educational qualification for entering into Agricultural Research Service is Master's degree and this might be the cause for acquisition of their highest University degrees.

The value orientation (Fatalism—Scienticism) and overall modernity of the scientist respondents were also studied and measured through the established respective scales and results of which are presented in Table 3.

Table 3

DISTRIBUTION OF RESPONDENTS ACCORDING TO THEIR VALUE ORIENTATION AND OVERALL MODERNITY SCORES

Variables	*No. of Respondents* N=66	*Per cent*
A. *Value Orientation*		
(a) High (21—26)	2	3·032
(b) Medium (15—20)	40	60·599
(c) Low (9–14)	24	36·369
B. *Overall Modernity*		
(a) High (28—31)	32	48·490
(b) Medium (24—27)	34	51·510
(c) Low (23 and below)	0	0

Table 3 reported that a majority of the respondents (60·59 per cent) had medium value orientation. It indicated that majority of the scientists were not wholly fatalistic not scientific in their outlook and approach. Only 36·37 per cent of the respondents believed on fate fully as they perceived that "Every event in mans life has already been settled and determined by his fate' or "A basic tragedy is that man proposes but God disposes" (Value Orientation scale : Chattopadhyay, 1963).

It may be said that the Agricultural Research Service Scientists were not highly oriented towards their values. This might be due to their religious background as 90 per cent of them belonged to Hindu religion (Table 1).

Similarly, Table 3 pointed out that 48·49 per cent respondents had high overall modernity scores which meant that they had modern thinking in perception and behaviour, and rest of the respondents (51·51 per cent) had medium overall modernity scores. These high and medium overall modernity scores of scientists might be due to their highest educational status (Table 2) and more exposure and interaction with outside world and people as indicated in their service experience (Table 2).

Conclusion

It may be stated from the above findings that for improving the work efficiency of the Agricultural Scientists and the effectiveness of research organisation, the Scientists should try to change their fatalistic outlook to scientific outlook. In other words, the value orientation of scientists sholud be directed towards desired scientific way than the fatalistic one. Further, they should develop their overall modernity still higher, so that they can cope up with the quantum of research work compatible with latest technological and agricultural innovations.

Acknowledgement

Author gratefully acknowledges the help and facility rendered by Dr. M. Rajagopalan, Director, National Academy of Agricultural Research Management for conducting this study and preparation of this paper.

References

1. Chattopadhyay, S. 1963. *A Study of Some Psychological Correlates of Adoption of Innovations in Farming.* New Delhi : IARI (Unpublished Ph.D. Thesis).
2. Indian Institute of Mass Communication. 1968. *Agro-Information Flow at the Village Level.* New Delhi : Report of the Survey of Communication Services in the adoption of H.Y.V.
3. Inkless, Alex. 1967. 'Becoming Modern', Paper presented at Michigan State University in *Modernisation Among Peasants : The Impact of Communication.* (Ed. E.M. Rogers and L. Svenning, 1969).

R.K. Samanta

Indian Council of Social Science Research Publications

SURVEYS OF RESEARCH

(i) Accounting Theory (ii) Demography, (iii) Economics, 7 vols. (iv) Geography 2 vols, (v) Management, 2 vols. (vi) Political Science, 3 vols. (vii) Psychology (viii) Public Administration, 2 vols. (ix) Sociology and Social Anthropology, 3 vols. (x) Second Survey of Research in Psychology, 2 Pts. *GANDHI BIBLIOGRAPHIES (ENGLISH, HINDI, SANSKRIT & URDU) UNION CATALOGUE OF SOCIAL SCIENCE PERIODICALS/SERIALS* 32 *Vols.*

OTHER PUBLICATIONS

1. The Status of Women (i) Literacy and Employment (ii) Household and Non-household Economic Activity (iii) Shifts in Occupational Participation 1961-71 2. Banking Policy in India: An Evaluation 3. A Long Way to Go 4. Functional Classification of India's Urban Areas by Factor-Cluster Method 1961-71 5. Shifts in the Function of Cities and Towns of India 1961-71 6. Population and Areas of Cities, Towns and Urban Agglomerations 1872-1971 7. Man and Land in South Asia 8. Soviet Studies in Social Sciences, etc.

JOURNALS

(i) ICSSR Journal of Abstracts and Reviews: Economics (ii) ICSSR Journal of Abstracts and Reviews: Geography (iii) ICSSR Journal of Abstracts and Reviews: Political Science (iv) ICSSR Journal of Abstracts and Reviews: Sociology and Social Anthropology. (v) Indian Dissertation Abstracts (vi) Indian Psychological Abstracts (vii) Research Abstracts Quarterly.

For complete catalogue and details regarding publications as well facilities provided by SSDC; please contact:
The Director
Social Science Documentation Centre
I.C.S.S.R.
35, Ferozeshah Road, New Delhi-110001 (INDIA)

Journal of Higher Education
Vol. 9 No. 1 Monsoon 1983

Communications

THE CHILD DEVELOPMENT CURRICULUM AND ITS RELEVANCE TO JOB COMPETENCIES EXPECTED IN THE FIELD

Over the years there has been an increasing awareness of the importance of Child Development as a special discipline of study and the significant contribution it can make toward effective services for the child and the family. Recognition of the role of the child development worker in understanding and facilitating the healthy growth of the total child and his family, has dispelled the lurking doubts as to whether such specialization has a contribution to make over and above that of social work, education, clinical services and the like.

The major credit for achieving such a recognition and credibility goes to the child development worker herself. Despite the inevitable teething trouble, the child development worker has succeeded in carving a niche for herself as a significant member of a team of workers providing services for children (The choice of the feminine gender is not so much a reflection of the women's lib as of the fact that the discipline, in our country is almost the sole monopoly of women !).

Completion of a quarter century of existence as a Department gave us an opportunity to take stock and assess the existing curriculum in Child Development and ask : For what kind of jobs are we preparing the child development workers ? Do the competencies developed in the existing program of study and those expected in the jobs match ? Furthermore, what about new job possibilities with new job requirements ?

The search for an answer to some of the queries raised above, provided the rationale for the present study. The present study aimed at evaluating and revising the Child Development curriculum, with the view of increasing its relevance and usefulness in the light of the competencies expected of the child development workers in fulfilling their job demands. The views of the alumni and of experts in Child Development and allied disciplines regarding the curriculum requirements that will rectify the present gaps in training, and meet the present and future job demands in the field, were focussed upon.

It was hoped that the study would serve a two-fold purpose of giving a feedback for curriculum revision, and also suggesting job possibilities, both for the present and future, thereby facilitating effective job placement of child development graduates.

The investigation concentrated primarily on the alumni and the curriculum of the Department of Child Development at the M.S. University of Baroda, since the good in-

tentions of broadening the coverage to include graduates in Child Development from other universities did not prove very fruitful.

Method

The main objectives of the research project were : (1) to identify the nature of jobs taken up by the alumni of the Department of Child Development, M.S. University, Baroda and the competencies required in the jobs, (2) to evaluate the extent to which the curriculum of the department has helped the alumni in developing these competencies ; and (3) to make necessary modifications in the curriculum with the view of increasing its relevance in the light of competencies expected in the field.

Subjects :(1) Out of 603 alumni whose names were identified from the enrolment registers, since 1950, 440 addresses were identified. The number of alumni who responded to the initial questionnaire were 197 (71 M.Scs.; 66 B.Scs.; and 60 Post-graduate Diploma holders). (2) Based on the information received from the above, as well as additional contact addresses obtained from them, **215** alumni who had been employed at some period or the other after graduation, were contacted through a second questionnaire; of these 107 responded (44 M.Scs.; 31 B.Scs.; 31 P.G. Dips.). (3) A sample of **41** experts in the field of Child Development and related disciplines were interviewed on their opinions regarding the Child Development training program. The interviewers hailed from Baroda, Ahmedabad, Bombay, Poona, New Delhi, Udaipur, Madras, Bangalore and Mysore.

Tools : A semi-structured questionnaire was used for obtaining preliminary background information from the alumni, as well as some generic feedback on the curriculum and alumni's professional experience. (2) A structured questionnaire was used to obtain information on competencies required for various job positions. The specified competencies related to knowledge, abilities, skills, and personal qualities required for the job(s) held by the respondent. These were followed by some open ended questions seeking recommendations for improving the curriculum. (3) The tool used with the experts and employers consisted of an unstructured open-ended interview schedule which sought information on jobs held by Child Development workers, responsibilities associated with these jobs and competencies required to fulfill these responsibilities, gaps in the training, need for para-professional Child Development workers, and related information.

Procedure : The two sets of questionnaires were mailed with two reminders for each. The interviews were conducted in the various cities with prior appointment from experts/ employers. A framework of the interview questions were sent at least a week prior to the interview in order to obtain well considered opinions. In two cases where the appointments were cancelled the interviews responded by mail.

Plan of Analysis : Data from all three sources have been analysed separately both quantitatively and qualitatively and then presented in an integrated manner highlighting the recommendations that merge for revitalizing the child development curriculum.

Major Findings

Child Development Curriculum and its Relevance to Job Competencies Required in the Field: (Responses of Alumni n=107)

(I) AREAS OF KNOWLEDGE CONSIDERED IMPORTANT

(a) Knowledge of Human Relations and Behavior including General Psychology-Physical Growth and Development, Environmental factors affecting development, Characteristics of various age groups, Individual differences; and Parent and Community Education received highest emphasis.

(b) Knowledge of case-work techniques including individual approach, group work, and guidance and counselling were emphasized by all (i.e. University and school teachers, Social workers, and special education teachers) except research workers. The latter considered knowledge in this area as not very important to their job.

(c) Knowledge in selected areas received emphasis only from those who held specific job positions and not from others. These include : (i) Knowledge of Family and Society emphasized by Research workers but not by alumni in other job positions ; (ii) knowledge of Early Childhood Education emphasized only by University and School teachers; (iii) knowledge of Special Education considered important by all Special Education Teachers (n=3), (iv) knowledge of Child and Family welfare considered necessary, by University Teachers and Social Workers; (v) knowledge of agencies sponsoring and funding field action and research programs, and dissemination of information considered essential by Research Workers and Social Workers. Research Methods, Statistics and research related information considered by Research Workers only (n=18).

(II) ABILITIES CONSIDERED IMPORTANT

(a) Abilities emphasized as important in the area of cognitive competence by a majority of the respondents include : long range vision, clarity of thought, creative thinking, proper perspective, and ability to integrate, interpret and utilize necessary information.

(b) Abilities emphasized in the area of social competence include :

(i) *Group work related competencies* such as ability to put across an idea lucidly, ability to arouse the interest and motivation of the group, ability to maintain the involvement and co-operation of the group, ability to understand one's own role in the group work in co-ordination with others, and maintain a healthy working climate;

(ii) *Competencies related to working with individuals* such as build up morale, identify assets and limitations, assign tasks and responsibilities according to abilities and interests, plan and set appropriate objectives, and provide guidance and counselling.

(c) Other abilities which received a high rating from the group on the whole included, ability to handle emergencies, to maintain and promote professional ethics, and to maintain records, progress reports, and data sheets.

(d) Abilities related to maintaining effective contacts with the various agencies, resource persons, and funding agencies was considered important only by social workers and not so by a majority of the other groups.

(III) SKILLS CONSIDERED IMPORTANT

(a) Skills emphasized by a large majority included those involved in working with others, such as building rapport, being observant, getting along with and relating to children, adults, colleagues, and the management, as well as communication skills such as use of voice and language, and adaptation of techniques to various group settings. Efficiency and neatness, as well as skills in systematic organization, recording and filing were also emphasized by a large majority.

(b) Skills in interviewing were considered important only by research workers and social workers; skills in guidance and counselling were considered important by a majority of university and school teachers, and social workers, but as not important by the research workers.

(c) Two items rated as low in importance by all category of employees include (i) skills in use of psychological tests, and (ii) skills in preparation and use of audio-visual aids.

(IV) PERSONAL QUALITIES CONSIDERED IMPORTANT

(a) Personal qualities considered important by all category of employees included those related to cognitive competence like, open mindedness to ideas and people, analytical thinking, alertness, imagination, intelligence, flexibility, perceptability, perseverance, creativity, good memory, curiosity, diligence and objectivity. and those related to social competence like, sensitivity, tolerance and patience, understanding, confidentiality, integrity, confidence, sincerity involvement and interest, sense of responsibility, efficiency, approachability and sense of professional ethics.

Recommendations for Enriching the Child Development Curriculum:

'Suggestions from experts and employers (n=41)

(1) There is an urgent need to include courses related to Child Health and Nutrition, Infancy, and Special Education for the Handicapped and Exceptional Children, and Psychological Measurement. A number of other optional courses should be offered. Existing courses in Research Method and Statistics, Family and Child Welfare, Family and Society need to be strengthened.

(2) In terms of practical training, there is need for exposing the trainees to varied and intensive field experiences especially with the underprivileged urban, tribal and rural population, and for adopting an interactional and participatory approach in field training. Skills in management, administration and supervision need to be developed through close supervision and guidance.

(3) *Other Recommendations*

It is further recommended that :

(a) In order to establish an identity of its own, the Child Development Curriculum must move away from the umbrella of Home Science.
(b) Specialization at various levels should be introduced.
(c) In order to gain recognition in the society as a whole, the Child Development Department must develop an aggressive attitude and set itself.
(d) The Child Development Department should make its research studies widely publicized.
(e) In order to make the curriculum more meaningful the content should be made more culturally relevant (to the Indian situation), and alumni experience be used as a feedback loop.

Current and Future Career Opportunities Available to Child Development Graduates:

Specialists in Child Development and allied disciplines, as well as employed child development graduates were asked to express their opinions regarding the current and future job prospects in the field. The results of the survey indicated that Child Development graduates are and can be effective in the following :

(i) as *University teachers* in post-graduate university departments and in affiliated junior colleges ;
(ii) as *school teachers* at the secondary, primary, and pre-school settings;
(iii) as *researchers* in research institutes, university departments, and in international, national, and state level welfare organizations.
(iv) as *administrators/supervisors* in various settings/agencies working with planning, implementation, and monitoring of basic services for children and their families;
(v) in *welfare settings* and in *development projects* as child welfare and probation/ training/education officers at district and block levels; as extension workers in rural and tribal areas; in government departments, industries, and voluntary agencies;

(vi) in *education, recreational,* and *institutional settings,* such as creche's and day care centres, toy libraries, hobby centers, children's section in libraries, and children's recreation centers; balbhavans or bhulka bhavans; as designers of children's playgrounds and play equipment; as hostel wardens in public schools, other recreational institutions, in juvenile courts; and as educational advisors/co-ordinators in non-formal education programs (for school dropouts and out-of-school youth) organized during vacations;

(vii) as *trainers* of para-professional workers, of local field workers, of teachers and of villagers (or local community members); in various action programs related to community development;

(viii) in *hospital settings* working with the handicapped and exceptional children, with the chronically ill; in prenatal and well-baby clinics; in pediatric wards; in mental health and other clinical settings (such as child guidance clinics); and in public health services;

(ix) as *counsellors* in public/municipal schools, in family and child welfare programs, in hospitals and foster homes, and with emotionally disturbed adolescents, as well as for newly married couples;

(x) as *consultants* in toy making industries, in television and other mass media/communications (especially in programs for women and children); for engineers and architects (in town planning), planning buildings (especially high-rise apartment complexes) housing, institutions, playgrounds, creches, etc.; in schools (for mental testing and counselling), and in industries; other employment prospect included :

(xi) as *authors/writers* developing Indian literature (especially children's books); designing books jackets for children's literature, and as *curators* (in children's section in the museum), as *entrepreneurs* manufacturing children's toys, clothes, foods, equipment;

(xii) as *self-employment* prospects such as starting nursery schools, child guidance clinics, and centers for conducting workshops in creative drama, in mass communication, producing and directing films, scripting for television and radio programs, and in freelance journalism especially in women's magazine.

Implications for Social Policy : Implications for social policy that can be derived from the findings of the reported investigation are not far to seek. It is evident that child development in India has come of age and has established itself as a distinct and specialized area of study, whose possible contributions to health, education, and welfare programs, particularly pertaining to women and children is indisputable. Yet the paradox remains that due recognition from the powers that be, especially in the government, is slow in coming.

It is noteworthy that international organizations such as UNESCO, WHO, and UNICEF have been in recent years taking an active, interest in the activities of professional bodies in Child Development across the world, leading to involvement of and participation by child development experts in policy decisions and programs related to children. In our own setting UNICEF took the lead in inviting the Faculty of Home Science, at the M.S. University of Baroda, to accept the assignment of preparing a plan document for the Social Input Project for Area Development for Baroda District in Gujarat.

The optimal utilization of the expertise available in the area of Child Development for programs related to Family and Child Welfare involve specific social policy implications. These include :

(i) documented official recognition of Child Development as an area of priority interest and mandatory involvement of experts in Child Development in all social policy decisions and in national and state level programs related to women and children;

(ii) nomination of specialists in Child Development as mandatory in specially constituted cells for Child and Family Welfare programs in the Planning Commission, in Departments of Social Welfare/Social Defence, State Institute of Education, Indian Council of Medical Research, Children's Book Trust, Bal Bhavan and so on (The status and recognition accorded to Health and Nutrition have not permeated the area of Child Development though these cannot be viewed as independent of each other).

(iii) designation of degrees in Child Development and Foods and Nutrition as preferred qualifications for higher cader of workers (e.g. CDPOs) in projects such as ICDS...;

(iv) official recognition of under-graduate diploma in Child Development and Post-graduate diploma in Early Childhood Education, and preferential selection of these diploma holders in programs of Child Welfare/Education.

With the explosion of knowledge regarding children and their environment, increasing sensitivity to the needs of children and the consequent dedication on the part of governments and other agencies concerned with the cause of the child, due recognition to the field of Child Development will be a step in the right direction.

Concluding Comments

In sum, the career opportunities available to Child Development graduates presents an encouraging picture. The optimistic note of an alumni, herself an active worker in the field, serve to reiterate the expressed opinion of many :

"I do believe Child Development graduates can, and should be everywhere, in Urban planning, Architecture and Building schemes, Ministry of Education, Planning Commission, on Advisory Boards at State and Local levels, in Child Guidance Clinics, in Children's Wards in Hospitals, in Rehabilitation Wards, in Law (dealing with child laws, marriage laws, inheritance laws)...we must encourage our graduates to break new grounds".

The range of career prospects in turn reflect the broadening goals and scope of Child Development in response to a variety of social and academic pressures seeking greater involvement of social scientists in general and specialists in Child Development in particular, to contribute their expertise and participate actively in intervention programs and social policy decisions to upgrade the quality of life of the disadvantaged sections of the society, particularly the most vulnerable group of women and children. For their development is our key concern and forms the subject area of our study.

Amita Verma
and
T.S. Saraswathi

OVERCROWDING IN UNIVERSITY AND COLLEGE HOSTELS

The expansion of Higher Education in our country has been spectacular since independence. The State Governments, the Central Government and the University Grants Commission have been spending enormous amounts on higher education. During the year 1981-82, the UGC's contribution alone came to the extent of Rs. 3,284·71 lakhs on higher education. Out of this amount, it could allocate only Rs. 161·58 lakhs for the construction of hostels in universities and colleges. But if higher education is to yield results, proportionate to the huge amounts invested on it, favourable living conditions should be available for the students staying in hostels. Due to overcrowding and congestion in the university and college hostels, the living conditions are poor which result in indiscipline and campus unrest in our universities.

In this paper, it is proposed to discuss the problem of overcrowding in the university hostels in the country with special reference to the universities in Andhra Pradesh. The following table shows the extent of expansion in higher education in the country since independence :

Table 1

Year	*Total No. of Universities*	*Total Enrolment*
1946–47	25	2,05,678
1980–81	123	27,52,431

It is evident from the above table that while the number of universities increased only five times the number of students enrolled increased almost fifteen times. Thus, the expansion of hostel facilities is not commensurate with the expansion of colleges and universities. The Education Commission (1948) said that 'the hostel is not simply a place to eat and sleep or even study though these are indispensable. Living in a hostel is an important part of education, it is a way of life and here students learn to live decently or indifferently or even in uncouth fashion.[1] It recommended that 'universities establish reasonable standards for hostels, residence and corporate activities as a condition of college affiliation that these standards be enforced and that no affiliation be granted in the future, until standards have been met.[2]

At the end of the first plan period, with a total enrolment of 7,12,697 students, accommodation could be provided only for 15 per cent of the students in the hostels. It was estimated that to increase it to 20 per cent, additional accommodation of 14·3 lakh sq. ft., was required at a cost of Rs. 17·16 crores. But there was an outlay of only Rs. 5 crores was provided in the Second Plan, which does not touch even the fringe of the problem[3].

In 1962, the UGC appointed a committee to consider not only the requirements of hostels and staff, but also the role that should be played by these halls of residence and the manner in which the hostels should be administered and staffed in order to fulfil their proper role. The Committee estimated that during the year 1962-63 the accommodation in hostels was available for only 18 per cent of the students. It also estimated that by the end of the fourth plan, 3·5 lahks of additional seats had to be provided at a cost of Rs. 120 crores (Total cost @ Rs. 4000 per seat).[4]

During 1980-81, there were 4722 colleges with only 2935 hostels and 19 per cent of these hostels were attached to universities. Presently, we have accommodation only for 14 per cent of the students enrolled in higher education. The universities and colleges are at present using the existing facilities to accommodate more and more students by converting single rooms into double, double into triple and triple rooms to four or five seaters. This has resulted in overcrowding and deterioration of residential standards in hostels.

Various enquiries conducted after students' unrest have held that for improving discipline in higher educational institutions, the living conditions in hostels have to be considerably improved.

The President's Enquiry Committee on Banaras Hindu University (1958) found that the hostels are 'overcrowded—and this overcrowding has become so chronic that the teachers are unable to control the classes...[5]

The Aligarh Muslim University Enquiry Committee (1961) held that the University should take up the matter of construction of new halls of residence on the campus immediately.[6] While giving evidence before the Barman Commission on Orissa Students Agitation, several witnesses pointed out that indiscipline is bound to continue until the problems

of better living conditions of the hostels are solved. One witness said, 'American Universities have been very successful also in utilising the hostels as centres for the development of student programmes and encouraging sound educational development'.[7]

The University Enquiry Commission (Bihar) also held that 'inadequate residential accommodation is one of the reasons for students' indiscipline'.[8] The Banaras Hindu University Enquiry Committee (1969) also advocated for the improvement of living conditions in hostels to improve discipline in campuses.[9]

As early as 1960, the UGC realised that the provision of hostel facilities was an integral part of the education and also a measure to improve educational standards. Consequently there was a major policy shift in the UGC which started an elaborate programme for providing hostels to college and university students. During 1969-74, it helped to construct hostels for 12,559 students in 63 universities and for 15,312 students in 286 colleges and paid grants to the tune of Rs. 2·37 crores to universities and Rs. 2·47 crores to colleges.[10] In 1973-74, of the total of 22,27,020 students enrolled in universities and colleges in the country, 3,30,667 (16·6 per cent) students were living in hostels. It means in terms of percentage hostel accommodation had increased just by 1·6 per cent, when compared to the position at the end of the First Plan. Besides, the allocation of funds for construction of hostels was cut down subsequently due to the temporary ban imposed by the Government of India on construction of buildings. The overcrowding became more acute due to the ever increasing enrolment of students and a reduction in the financial outlay on hostels by the UGC.

The UGC's assistance for construction of hostels has been on a sharing basis. The Commission provides 50 per cent in the case of men's hostels and 75 per cent in the case of women's hostels as matching grant. Even if the State Government were prepared to meet the balance, the resources of the Commission were limited because since 1973-74, the Government of India has included hostels among non-functional buildings and a temporary ban was imposed on construction of non-functional buildings including hostels.

The Vice-Chancellor's Conference 1975 requested the Government of India to remove the ban and treat the student residences as an essential component of higher education facilities. The impact of the ban was such that during 1976-78 only a sum of Rs. 80·39 lakhs was paid to universities and 64·76 lakhs to colleges for construction of hostels. The conference also recommended that the Universities/UGC should initiate action to make a close study of the living conditions in hostels and bring them to the notice of the State Governments and Universities and initiate urgent remedial measures. In pursuance of this recommendation, the Tata Institute of Social Sciences was asked by the UGC in February 1977, to conduct a survey on the living conditions of the students in University and College hostels. The Principal focus of the Report submitted in 1979 was on the provision of hostels and utilisation of facilities therein, like accommodation, mess, sanitation, etc. This is the only major and useful survey that has been made on the subject, in our country.[11] The survey brought to light several interesting facts concerning the living conditions of the hostels in India such as the following :

(i) 78 per cent of the hostels now existing were reported to have been constructed during the period of 30 years after independence. The sixties reported the highest growth (37 per cent) ;
(ii) In 14 per cent of the hostels in the country, the number of students admitted is greater than the number for which the hostels were built ;
(iii) In medical college hostels and social sciences and humanities hostels the overcrowding is higher than other hostels;
(iv) Quite a few of the hostels in the country, either have no rules or the rules are violated as far as overcrowding is concerned;
(v) In some cases, the rooms are so congested that there is hardly any space to move around;
(vi) In some of the overcrowded hostels, the hostel had no fixed seating capacity, and the number of occupants allowed to occupy the available accommodation

was flexible and determined almost entirely on the basis of demand for accommodation, and

(vii) Only 52 per cent of the hostels are in a position to accommodate the full complement of inmates.

Keeping in view the above facts concerning the problems of overcrowding and maintenance of discipline in the hostels, it is useful to analyse the problem in depth. The rooms in hostels are of four categories viz. : (a) single-seater rooms; (b) two-seater rooms; (c) three-seater rooms; and (d) dormitories for four to ten students in each.

According to the UGC standards, a student requires 80 sq. ft. in double seater rooms and 100 sq. ft. in single seater rooms. In case of three seater, the area prescribed is 70-75 sq. ft. The UGC Survey (1979) has reported that the following position in regard to the different types of rooms available in hostels throughout the country :

(a) Single-seater 6 per cent
(b) Double-seater 8 per cent
(c) Triple-seater 10 per cent
(d) Varying combinations of the above 27 per cent
(e) Dormitories accommodating 4–10 students, 19 per cent
(f) Varying combinations of the above 30 per cent.

The survey also reports that 53 per cent of the university hostels have exclusively single or double seater rooms and only 3 per cent are having dormitories where in four or more students are accommodated. Thus, the scope for converting single seaters into double, double into triple etc., is limited. On this issue the Education Commission (1948) says :

> One or two students in a single room is the ideal arrangement with a common space for study if there are two...In some hostels, dormitories in which a dozen or more students sleep and use separate rooms during the day for study and other purposes, offer satisfactory living conditions.[12]

The Robbins Report of UK analyses this aspect of overcrowding and says—"...there are cases where three students share one study-bed rooms and in the absence of any kind of supervision, it can be said that the limit has already been passed..."[13]. Overcrowding in the hostel rooms will spoil the minds of the students and their attention is completely diverted from studies. Due to these ad hoc arrangements, hostels have become just places of residence. It was revealed in 1955 in a survey conducted on Calcutta hostels, that 'the inmates suffered from drabness, dirt, lack of ventilation, lack of sunlight or adequate light and worst of all unhygenic and pitifully inadequate sanitation'.[14]

The Burman Commission also held that : "...there should be better arrangements for proper housing of the students". The Commission found that 4 to 5 students were housed in one room which was formerly being used either as single seated or double seated rooms and felt that such congestion must be avoided.[15]

While creating insurmountable problems for the university administrators, the overcrowding in university and college hostels is largely responsible for contemporary students indiscipline in our centres of higher learning. Among the university functionaries the worst affected are the Hostel Wardens who have to allot rooms to a large number of students admitted, for whom there is no accommodation in fact. Consequently, they give admission and leave it to the senior students to accommodate the new-comers. When the new entrants approach the senior boarders for accommodation, it is given to them on the basis of political affiliations etc., and the troubles for the management start at this point.

The Committee of experts constituted by the UGC to consider the report of the Survey (1979) took all these aspects into consideration and made several useful recom-

mendations. On the basis of these recommendations, following norms were laid down by the UGC for reducing overcrowding in hostels :[16]

(a) The students doing a part-time or full-time job while studying in the university shall not be provided accommodation in the hostels ;
(b) Universities and colleges may fix some time limit, beyond which a student should not be allowed to reside in the hostel;
(c) Students doing research may be allowed a maximum stay of 18 months in case of M.Phil. scholars and 4 years in case of Ph.D. scholars;
(d) While admitting students to the hostels, priority be given to fresh students admitted to various courses;
(e) No guest be allowed to stay in the night in the hostel rooms;
(f) Construction of more than three seated rooms in the hostels be discouraged; and
(g) In future, construction of dormitories should be encouraged in hostels, to reduce costs.

With a view to reducing the congestion and overcrowding in hostels, the above norms were communicated by the UGC to all the Universities and State Governments for implementation.

The Osmania University conducted a High Level Seminar, in May 1981 on "Management of University Hostels in Andhra Pradesh" at which the recommendations of the expert committee of UGC were thoroughly discussed. The main objective of the Seminar was to identify the problems arising from overcrowding in hostels and to find solutions for them. The discussions covered the various aspects of the problem of accommodating students in the university hostels in Andhra Pradesh which are found to be overcrowded.

The following tables show the extent of expansion in higher education in Andhra Pradesh and the accommodation in university hostels.

Table 2

Year	*Total No. of Universities*	*Total Enrolment*
1946-47	2	14,307
1980-81	7	1,65,037

From Table 3, it may be seen that the number of hostel admissions during 1980-81 in campus hostels has increased to 11,277 as against the available capacity of 7,539 seats. For accommodating the extra 3,738 students, the universities had no alternative but to convert single rooms into double rooms, double into triple etc. There are two special reasons for this increase in demand in Andhra Pradesh University. In the first place the percentage of students getting admission to various faculties from the mofusil areas has increased. The introduction of Entrance Examination in some universities for all the post-graduate and professional courses, and provision to write these tests in regional language media, have attracted students from mofusil area belonging mostly to weaker sections who are all in need of hostel accommodation on the campus. Secondly, till 1975, the benefit of residential scholarships was available only to SC/ST students. But now it has been extended to listed backward class (LBC) and Economically Poor Person (EPP) students. The State Government has stipultaed that the students residing in hostels alone are eligible for residential scholarships. While a residential student gets Rs. 200 per month as scholarship, a non-residential student gets only Rs. 200 per annum. This vast difference

Table 3

ACCOMMODATION IN HOSTELS
(UNIVERSITY TEACHING DEPARTMENTS/UNIVERSITY COLLEGES)

Name of the University	*Capacity* (1975-76)	*Actual No. of students accommodated* 1975-76	(1980-81)	*Actual No. of students accommodated* (1980-81)
Osmania	1,179	1,179	1,608	2,458
Sri Venkateshwara	1,242	1,492	1,274	2,035
Kakatiya	148	250	272	479
Nagarjuna	—	—	240	585
Andhra	2,077	2,565	2,273	3,660
JNTU	705	879	1,044	1,302
APAU	470	462	670	618
Central University, Hyderabad	—	—	158	140
Total	5,821	6,827	7,539	11,277

between the rates payable to the two categories of students is largely responsible for more and more students demanding hostel accommodation.

The Osmania University seminar considered all these aspects and recommended to the Government and the universities to implement the guidelines issued by the UGC. The State Government, issued an order on the 8th September 1981 incorporating the UGC norms as guidelines for hostel admissions.[17] Government also issued another order directing the universities and colleges not to admit into hostels students exceeding the actual number of available seats.[18] In fact, the issue came up before the Supreme Court in a writ petition filed by a law student of Osmania University. The writ was dismissed on the commitment made by the university that the student would be accommodated in the ensuing vacancies on a priority basis. The university submitted to the Court that steps are being taken by it as well as by the State Government, rationalising the admission into hostels and thereby improving the living conditions of the residents and to create a healthy condition and conducive atmosphere for studies.[19]

Thus universities in Andhra Pradesh are making efforts to solve the problems relating to hostel accommodation. But all these measures may not meet the growing requirements and steps should also be taken to increase the number of seats by constructing more hostels. A.P. Universities require 4000 additional seats in hostels as at present, which number would increase in the years to come. Even if dormitory type of accommodation is to be provided, it requires the construction of 2·80 lakh sq. ft. of accommodation at a cost of Rs. 2·24 crores. The Government of Andhra Pradesh is liberal in giving residential scholarships to post-graduate and professional course students compared to others. It is spending Rs. 11 crores per annum on post-matric scholarships alone. A sum of Rs. 2 crores for the construction of dormitories may not be high for the Government. This should be spent during the sixth plan period (1980-85) by the State Government, for the construction of additional accommodation in campuses. To look for assistance only to UGC to solve this gigantic problem is not justified. Organisations like the HUDCO and LIC also should come forward and help in constructing additional hostel accommodation in view of the fact that a large number of students belonging to the weaker sections of the society are also in need of hostel accommodation.

The State Governments and the universities in the country should take steps to allocate funds for the construction of hostels. If the congestion is reduced, peace can be maintained in the hostels. Peace in the hostels will result in peace in the campus as the hostels very often prove to be the breading grounds for indiscipline.

Among the short-term measures suggested by the Conference of Vice-Chancellors (1975) to alleviate the situation, the following are worth mentioning in this connection.[20]

(a) Cheaper lodging may be provided around the campus where students may be ensured of a decent environment but can make their own mess arrangements;
(b) The experiments made in the Mysore University of encouraging each district to put up cottages for students may be tried out in other areas;
(c) The State Governments may also consider requisitioning lodgings through ordinance or otherwise for use of students.

In Andhra Pradesh, universities have been making efforts to tackle the problem of overcrowding in hostels. The peaceful atmosphere prevailing in these universities is an indication for this effort. But much more need to be done to overcome the problem completely. The other States have to follow this policy and initiate immediate steps to expand the hostel facilities to arrest the unrest and indiscipline in campuses.

References

1. *Education Commission Report* 1948; and *UGC Report* for 1980–81.
2. *Report of the University Education Commission* 1948, Government of India Publications, 1949, Vol. I, pp. 376 and 390.
3. *Report of the Panel of University Buildings (Hostels) UGC,* 1964, p. 4.
4. *Report of the Committee on Residential Accommodation,* UGC, 1965, p. 24.
5. Report of the Banaras Hindu University Enquiry Committee, Ministry of Education, Government of India, 1958, pp. 11–12.
6. Report of the Aligarh Muslim University Enquiry Committee, AMU, Aligarh, 1961, p. 124.
7. Report of the Commission of Enquiry, Orissa Students Agitation in 1964 Vol. I and II, Home Department, Government of Orissa, 1966, pp. 976, 985, and 1015.
8. Report of the University Enquiry Commission Bihar on the working of the Patna University, Bihar Government Publications, 1967, p. 41.
9. Report of the Banaras Hindu University Enquiry Committee, Ministry of Education, Government of India, 1969, p. 175.
10. *UGC Report* 1976–77, p. 128.
11. J. Kurien, University and College Hostels—Survey of Living Conditions of Students in University and College Hostels in India, Tata Institute of Social Sciences, Bombay, unpublished, 1979.
12. *Report of the University Education Commission* 1948, p. 374.
13. *Higher Education : The Report of the Committee Appointed by the Prime Minister,* under the Chairmanship of Robbins 1961–63, HMS Office, 1963, pp. 589–590.
14. Cormack Margarett, *She who rides a peacock,* Indian Students and Social Change, Asia Publishing House, 1961, p. 204.
15. *Barman Commission Report* on Orissa students Agitation, p. 1015.
16. *Bulletin of Higher Education,* UGC, October 1981, pp. 13 and 14.
17. *GOMs No.* 1024/*Edn.* (*Y*) *dt.* 8–9–1981 issued by the Government of Andhra Pradesh.
18. *GOMs. No.* 608/*Edn.* (*Y*) *dt.* 17–7–1982 issued by the Department of Education, Government of Andhra Pradesh.
19. Counter filed by the Osmania University in WP No. 7136/82 before the Supreme Court of India on 18–10–1982.
20. Conference of Vice-Chancellors, 1975, UGC, p. 192.

M.V. Soundara Rajan

INTERNATIONAL SYMPOSIUM ON PROBLEMS OF DEVELOPMENT OF UNDERPRIVILEGED COMMUNITIES IN THE THIRD WORLD COUNTRIES*

The Indian Anthropological Association (IAA) and the International Union of Anthropological and Ethnological Sciences (IUAES) jointly organised an International Symposium on 'Problems of Development of the Underprivileged Communities in the Third World Countries : SUNCOM-82'.

The main purpose of organising the Symposium was to discuss the problems, of Development of the Underprivileged and identify the role of the Social Scientists in it. Accordingly, the deliberations focused on various themes related to the definition of the underprivileged, identification of their problems, legal provisions for their protection, consequences of the exploitation of the underprivileged developmental strategies etc. It was hoped that discussions and interchange of experiences on these aspects would help to evolve programmes and policies which could be applied towards the amelioration of the underprivileged in different countries.

Basic Issues

The ten themes, identified initially were merged into eight basic issues of which were discussed in different business session. There were also two additional sessions, included later on, on the request of the participants as they were considered to be integral part of the main themes being discussed in the symposium. The following eight main sessions were organised during the Symposium :

(1) Concept of the Underprivileged in the Trans-national context.
(2) Underprivileged Communities in the contemporary Socio-Economic Context.
(3) Constitutional/Statutory provisions for safeguarding the interests of the underprivileged.
(4) Application of Anthropological and other Social Science knowledge to the development of the underprivileged.
(5) Demographic trends and rise of ethnicity among the underprivileged.
(6) Underprivileged Communities in the Third World in the Industrial millieu.
(7) Health Status, Nutrition and Medical care among the underprivileged.
(8) Development Strategies for the Underprivileged.

In addition to the above, two concurrent sessions were also added on the request of the participating delegates as these were thought to be integral part of the issues already taken up in the symposium. These were :

(1) A special session on Africa as an extension of the discussion on 'Demographic Trends and rise of Ethnicity among the underprivileged'.
(2) Role of the Voluntary agencies in the Development of the Underprivileged.

Prof. L.P. Vidyarthi, in his presidential address, emphasized the need for policy oriented research. He was of the opinion that somewhere, something had gone wrong towards the development of the underprivileged. The theories in this field as evolved and sought to be applied, needed a thorough scrutiny as none of them could be blindly followed without assessing their efficacy or applicability in the local situation. Prof. G.K. Nukunya, from Nigeria greeted the participants and the organisers of the symposium on behalf of the people of Africa. He stressed the need to visualise the needs of development of the underprivileged communities world over in total perspective. These were, more or less, similar

*Brief Report of the Seminar held in New Delhi from October 2–8, 1982 and Organised by: Indian Anthropological Association (IAA) and International Union of Anthropological and Ethnological Sciences (IUAES).

to each other in nature and intensity. Therefore, while dealing with the problems of development of the underprivileged, the point had to be realised that fundamentally they were the same and, therefore, there was a need to have a global perspective. The session ended with a vote of thanks.

The need for cheap publications was also emphasized in the symposium so that the masses could have access to them. If the literature is published in a language which people can not understand and at a price which they can not afford, it would remain confined to a selected few. The folk media with their oral traditions scored over the print media in this respect, as they were cheap, disseminated knowledge through the inter-personal communication and were, by and large, culturally compatible.

The main recommendations emerging out of different business sessions are summarised below :

(1) *Underprivileged* is a condition of economic deprivation social, discrimination and political non-participation in the national decision making. The criteria for identifying the underprivileged needed to be reviewed to keep up with the dynamics of the changing situations as also to assess their universal applicability. Some concepts and definitions formulated during the colonial rule also required redefinitions as they were reflective of particular attitudes towards the natives.

(2) There should be indigenous models for identifying the underprivileged as also for their development. Neither the models evolved at one place could be applied in different situations nor the notions about the underprivileged in the developed societies could fit in the conceptual framework of the developing nations.

(3) Combined efforts of the Governments, voluntary organisations and the academicians, researchers etc., appropriate social legislations and the will to improve with in the community were essential for lifting the underprivileged above the poverty line.

(4) Social organisation, structure of values and economic organisation were positive inputs in the planning process and should be fully utilised for the amelioratory programmes for the underprivileged.

(5) Anthropologists should be involved in the developmental effort as they spent long time while working in the communities and understood the psyche of the people. Social Scientists should address themselves to the realities and act as catalysts of change.

(6) The underprivileged should be organised to take up developmental work themselves. This would help to generate a sense of participation amongst them.

(7) The objectives, goals and means of development should be relevant to the dynamics of changing societies. Greater action was called for bridging the gap between the declared policies and extent of their implementation. The constitutional provisions and the executive action had to go together.

(8) Protest or revolt by the underprivileged indicated awareness of their own deprivation and low level of technological development. This was also indicative of a desire to achieve higher levels in life. The main source of discontentment was inequitous distribution.

(9) There was greater need for applied research for development. This called for multi-disciplinary approach for research, monitoring or evaluation and also for taking corrective action. It was also necessary to evaluate the applicability and efficacy of the western models of development through pilot experiments before actually adopting them for extension. In this context, the need for regular interaction between the administrators, researchers and policy makers could hardly be over emphasized.

(10) It was necessary to assess the need, modalities and associated values of birth control from the point of view of the underprivileged.

(11) There should be integrated approach for basic health care, nutrition, immunisation and family planning. Adequate food supply, economic development and social development programmes should go together. Without this there could be no liberation from hunger or the disease or mal-nutrition. There was a basic need for identifying and evolving health-care strategies and nutritional strategies at the sub-regional level. Mobilisation of

local resources for such programmes as also to generate people's support and encourage their greater participation was a pre-condition for initiating social action, in this regard.

(12) There was a greater need for indepth research in the application of indigenous medicine systems for health care.

(13) The need for geographical and professional rehabilitation of those who find themselves displaced as a consequence of industrialisation could not be over emphasised. For this detailed guidelines and programmes were needed for hastening the process of integration.

(14) Enough data was available on different aspects of development of the underprivileged and their basic problems. Some how or the other, it could not be utilised for evolving policies or programmes. This was basically due to lack of communication between the administrators, academicians and the people. Lack of proper feedback from the field was the basic lacuna in our developmental programmes and policies.

(15) The educational system should be more relevant to the local needs. It should not be dependent on the printed word alone but should also be non-formal or linked with functional literacy.

(16) Specialised training of developmental administrators was needed so that the programmes could be related with the felt needs of the people and were not merely superimposed.

(17) Role of women was not fully tapped in the developmental effort for the underprivileged. Conscious efforts should be made to mobilise them and for this it was necessary to launch special programmes and projects.

(18) The basic truth has to be realised that people have to develop themselves and technology only helped in it. The voluntary agencies had to play an important role in generating this feeling amongst the underpivileged and galvanising them into action. The voluntary agencies could be mobilised to take up this work with little support and develop it as a popular movement. They essentially played a complimentary role to the Governmental effort and were not its competitors.

All the participants were unanimously of the view that the International Symposium on Problems of Development of the Underprivileged should lead to similar efforts in future and should be regular activity. *Suncom* movement should not rest till the international community woke up to the needs of development of the underprivileged in the right perspective and initiated appropriate programmes for their amelioration. International peace could only be ensured with the underprivileged world over getting their long overdue share in the resources.

Valedictory Session

It was emphasized that development of the underprivileged required a multipronged approach for which a multi-disciplinary team of social scientists, administrators, politicians and other professionals was needed. The social scientists could provide the deep insights into the fundamental problems of the underprivileged but the implementation of plans needed support of others. Deprivation as a phenomenon was existent both in the affluent and poorer countries. Tradition bound societies would have to adopt modern ways of life if they wanted to rise to the level of the advanced and modern societies. People could not be expected to follow their old ways of life and yet think of competing with the modernised communities in terms of progress.

Sunil Misra

DETERMINANTS OF LEVELS OF HIGHER EDUCATION IN STATES

India has made spectacular progress in the field of Higher Education during the last three decades. However, the level of development of Higher Education has not been uniform with in the country because of a number of Socio-Economic and Political factors. For

example some of the States/Union Territories such as Delhi, Chandigarh, Gujarat, Haryana, Maharashtra, Punjab, West Bengal, Pondicherry and U.P. depict a much better picture when we compare the levels of Higher Education in these States to those of Bihar, Orissa, Andhra Pradesh, Assam and Himachal Pradesh. An attempt has been made in this paper to analyse the State-wise position and to identify the variables-Socio-Economic and Political which are responsible to the development of Higher Education in a particular State. A popular and common belief that literacy alone is responsible for the level of Higher Education in a State has been disproved as compared to other important variables. In the above context, the National Policy on Education 1968 laid down by the Ministry of Education to reduce the regional imbalances in the provision Educational facilities is worth mentioning. Thus there is an urgent need to identify the most important variables which affect the level of Higher Education in a State so that the planning of Higher Education could be made more effective and to meet the main objective i.e. to reduce the regional desparities in Higher Education.

The term Higher Education (as defined for this particular study) implies the education imparted after the school education stage. It includes pre-degree, degree. Post-graduate and research courses. However in case of U.P. since the number of students studying in intermediate courses is very very large the same have not been included under Higher Education for the purpose of the study.

Data Used and its Limitations

Data on the various variables-number of institutions, enrolment and related indices is based on the Ministry of Education's annual publication "Education in India, 1976–77". Data on budgeted expenditure on higher education has been taken from the Ministry of Education's annual publication "Expenditure on Education as shown in Central and States annual Budgets.

Data on population in the age-group 17–22 is based on the population estimates supplied by the Registrar General's Office. Data on literacy, urbanisation, sex ratio, SC/ST population, and population aged 35+ who are matriculates and above have been taken from the following Publications.

(a) Census of India 1971—General Population Tables Part II-A.

(b) Census of India, 1971—Socio-Economic and Cultural Tables Part II-C.

The complete data in respect of different variables used in the study is given in Table 1.

The data suffers from the fact that the reference year for the population and other socio-economic data relates to 1971 whereas the educational data relates to the year 1976-77. However, this is not likely to effect the analysis significantly, as the total effect will be equally shared by all the States/Union Territories.

Table 2 pertains to the statistical information mean, S.D. and C.V. about the different variables used i.e. (Y, X_1, X_2 etc.). It may be observed that the co-efficient of variation in the case of Y, X_4, X_8, & X_9 is high, indicating the inconsistency between the different observations for these variables. This inconsistency is due to the large variation from State to State and will not affect the analysis from any view point.

This study suffers from a number of limitations in the absence of adequate availability of data. This relates to the coverage of non-formal sector of education which covers the education being imparted by a large number of unrecognised institutions preparing students for appearing in examinations leading to a degree in Higher Education, correspondence courses run by a number of universities/Institutes in the country and several part time courses in vocational/technical courses like A.M.I.E., I.C.W.A., Secretariat Practice, Chartered and Cost Accountancy* etc. However, keeping in view the fact that the total contribution of the Non-formal sector still being low in comparison to the formal sector and expected to affect all the States/Union Territories equally this study does make valid analysis to identify the factors responsible for the development of Higher Education in a State.

Table 1

DATA USED IN RESPECT OF DIFFERENT VARIABLES FOR THE STUDY

S. No.	States	X1	X2	X3	X4	X5	X6
1.	Andhra Pradesh	28·25	977·00	19·32	2·57	18·39	10·60
2.	Assam	35·51	896·00	8·82	2·58	18·94	16·30
3.	Bihar	23·51	954·00	10·00	2·51	23·63	9·10
4.	Gujarat	42·00	934·00	28·08	3·84	21·15	21·10
5.	Haryana	29·74	867·00	17·66	3·08	18·89	14·20
6.	Himachal Pradesh	32·27	958·00	6·99	3·14	27·44	26·20
7.	Jammu & Kashmir	21·15	878·00	18·59	2·93	8·25	21·10
8.	Karnataka	35·92	957·00	24·31	4·03	15·49	15·10
9.	Kerala	69·15	1016·00	16·24	5·04	10·28	35·40
10.	Madhya Pradesh	26·16	941·00	16·29	2·08	37·37	11·40
11.	Maharashtra	44·94	930·00	31·17	4·44	13·92	25·30
12.	Manipur	38·30	980·00	13·19	3·19	32·70	27·80
13.	Meghalaya	37·66	942·00	14·55	4·28	80·81	25·10
14.	Nagaland	32·90	871·00	9·95	1·53	88·61	27·60
15.	Orissa	31·04	988·00	8·41	1·53	38·20	13·40
16.	Punjab	35·22	865·00	23·73	5·01	24·71	25·60
17.	Rajasthan	21·98	911·00	17·63	2·29	28·53	13·90
18.	Tamil Nadu	42·94	978·00	30·26	3·60	18·90	27·00
19.	Tripura	37·62	943·00	10·43	2·68	41·29	14·40
20.	Uttar Pradesh	24·49	879·00	14·02	2·82	21·84	17·10
21.	West Bengal	40·51	891·00	24·52	6·84	25·95	18·60
22.	Andaman & Nicobar Islands	50·46	644·00	22·77	6·00	15·52	26·90
23.	Arunachal Pradesh	14·09	861·00	3·70	1·22	79·02	3·90
24.	Chandigarh	70·56	749·00	90·55	34·01	11·30	30·90
25.	Delhi	64·62	801·00	89·70	23·47	15·60	58·30
26.	Goa, Daman & Diu	50·31	989·00	26·44	4·89	2·83	30·90
27.	Pondicherry	50·32	989·00	42·04	4·07	15·50	35·50

X1=Percentage of literates aged 15 and over in a State during 1971.
X2=Sex Ratio i.e. Number of females per thousands males.
X3=Percentage of urban population to total population according to 1971 census.
X4=Percentage of population in the age group 35+ who are matriculates and above.
X5=Percentage of Scheduled Castes and Scheduled Tribes population during 1971.
X6=Percentage of enrolment at the Secondary level to the population in the age group 14–17 years (or enrolment ratio at the Secondary stage.)

Table 1 (Contd.)

S. No.	States	X7	X8	X9	Y
1.	Andhra Pradesh	28·85	13496	56	2·77
2.	Assam	33·05	10888	40	2·05
3.	Bihar	13·92	13334	32	1·88
4.	Gujarat	33·13	9658	36	5·11
5.	Haryana	23·66	6585	34	5·18
6.	Himachal Pradesh	23·93	7119	63	2·64
7.	Jammu and Kashmir	25·43	10088	161	3·39
8.	Karnataka	32·63	6647	60	4·57
9.	Kerala	47·34	11174	73	3·19
10.	Madhya Pradesh	24·14	10884	30	3·98
11.	Maharashtra	30·44	6893	47	5·41
12.	Manipur	33·75	2925	74	4·47
13.	Meghalaya	40·54	7215	74	3·38
14.	Nagaland	35·71	7910	48	1·13
15.	Orissa	22·10	14712	34	1·82
16.	Punjab	35·27	7069	50	5·88
17.	Rajasthan	17·29	1393	34	3·37
18.	Tamil Nadu	33·45	12854	43	3·62
19.	Tripura	40·18	13375	46	2·98
20.	Uttar Pradesh	15·06	6148	29	4·13
21.	West Bengal	28·61	10466	46	7·32
22.	Andaman and Nicobar Islands	40·56	10350	55	2·82
23.	Arunachal Pradesh	17·93	6500	27	0·21
24.	Chandigarh	44·47	3011	648	32·86
25.	Delhi	40·36	6216	28	18·61
26.	Goa, Daman & Diu	41·36	4621	78	5·09
27.	Pondicherry	32·89	4321	1288	5·33

$X7 = \frac{\textit{Percentage of girls enrolment at Sec. stage (classes IX-XI/XII)}}{\textit{Average population being served by Hr. Edn. instt. in the State during 1977.}}$

$X8 = \frac{\textit{Total population of a State}}{\text{Total number of Hr. Edn. institutions in the State/Union Territories.}}$

$X9 = \frac{\textit{Percapita budgeted expenditure on higher education in the State/Union Territories.}}{\textit{Total students enrolment in Hr. education courses} \times 100}$

Total population in the age group 17–22 yrs.

Table 2

DEP.—INDEP. VARIABLE STATISTICS

Variables	*Mean*	*S.D*	*% Co-efficient of variation (C.V.)*
Y	5·2996	6·2861	118·61*
X_1	38·2252	13·8972	36·36
X_2	910·7036	80·1009	8·80
X_3	23·6800	20·6317	87·13
X_4	5·3222	6·9047	129·73*
X_5	27·9518	21·3956	78·54
X_6	22·3222	10·7359	48·10
X_7	30·9648	8·9346	28·85
X_8	10995·9257	11110·5117	101·04*
X_9	77·1659	115·9270	150·23*

**Data not very consistent.*

Another limitation of this study is that it does not take into account the inter-state migration of students for the purpose of getting Higher Education. However this factor also does not affect the over all position as the magnitude of inter State migration in India may be quite negligible when compared with the total enrolment in a State.

One of the important conclusions of this study is highlighting of the fact that the percentage of population aged 35+who are matriculaies and above (X_4), level of urbanisation (X_3) and the per capita budget on Higher Education (X_9) are the most important variables which effect the level of Higher Education in a state. The conclusions made as a result of analysis from this study are given in the last section under the heading "conclusions and further Research".

Variables Used

In this particular study we have used one dependent variable (Educational output) and 9 independent variables (Social, Economic and Political inputs) explained as under :

Dependent Variable

The level of higher education, as measured by the enrolment ratio in the age-group 17–22 years of the population has been taken as the dependent variable. The enrolment ratio at higher education in a State/Union Territories (Y), is defined as under :

$$Y = \frac{\text{Total students enrolment in Hr. Education courses}}{\text{Total population in the age group 17–22 yrs.}} \times 100$$

Independent Variables

There could be a large number of independent variables which explain the level of variation explained in the dependent variable, but based on the author's experience as well

inadequate availability of information and the cost effectiveness, only the following independent variables have been considered.

A. Social Variables

X_1= Percentage of literates aged 15 and over in a State during 1971.

X_2= Sex Ratio i.e. Number of females per thousand males.

X_4= Pecentage of population in the age group 35+ who are matriculates and above according to 1971 census.

X_7= Percentage of girls enrolment to total enrolment at secondary stage (classes IX–XI/XII).

B. Economic Variables

X_3= Percentage of urban population to total population according to 1971 census.

X_6= Percentage of enrolment at the Secondary level to the population in the age group 14–17 yrs. (or enrolment ratio at the Secondary stage).

X_8= Average population being served by a Higher Education institutions in the State during 1977.

$$X_8 = \frac{\text{Total population of a State}}{\text{Total number of Hr. Education institutions in the State/U.T.}}$$

X_9= Percapita budgeted expenditure on higher education in the State/U.T.

C. Political Variables

X_5= Percentage of Scheduled Castes and Scheduled Tribes population during 1971.

The variables considered measure the socio-economic and political behavior in a State which are likely to affect the level of Higher education in a State and are therefore considered important from the analysis view point. However all the variables considered are not likely to make the same significant contribution in explaining the level of higher education in a particular state, for the reason that there may be some interdependency between different independent variables.

Methodology

As a preliminary attempt, Multiple linear regression analysis has been attempted considering one dependent variables and nine independent variables. For this purpose, step-up multiple regression methodology has been applied using CYBER 170/720 computer system making use of international mathematical and statistical library package (IMSL) : Due care has been taken regarding the fulfilment of the basic assumptions required for the multiple regression analysis.

Results of Multiple Regression Analysis

Table 3, gives the linear correlation matrix between different Dependent vs Independent as well as intra class linear correlation coefficient.

It may be observed from the above Table 3 that "Correlation between the variables (X1, X3), (X3, X4), (X1. X4) and (X1. X7) is very high. In other words this implies that literacy has high correlation with (i) the level of urbanisation (ii) percentage of population aged 35+ and above matriculates and above enrolment ratio at the secondary stage and (iii) percentage of girls enrolment to total enrolment at the secondary stage (classes X–XI/XII). It may be seen that the varibale X2 Sex ratio, X5, (% of SC/ST), (X7, X8) does not have high correlation with either dependent or any of the other in dependent variables taken in the study.

Other variables for which the inter correlations are very high are (X3, X4); (X3, X6); (X3, X9); X4, X9); and (X6, X7). The inclusion or deletion of the variable to be included

Table 3

LINEAR CORRELATION MATRIX

Indep. Variables									*Dep. Variable*	
X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	Y	
1·0000	—0·1808	0·7145	—0·6917	—0·4048	0·7948	0·8288	—0·3839	0·4718	0·6398	X_1
	1·0000	—0·4094	—0·5110	0·0043	—0·1794	—0·1467	—0·0589	—0·3404	—0·4477	X_2
		1·0000	0·9225	—0·3880	0·6858	0·4536	—0·2976	0·6224	0·9115	X_3
			1·0000	—0·2735	0·5698	0·4587	—0·2180	0·7740	0·9789	X_4
				1·0000	—0·2654	—0·1244	0·4638	0·2194	—0·3069	X_5
					1·0000	0·6591	—0·4338	0·2194	0·4982	X_6
						1·0000	—0·3003	0·3500	0·3988	X_7
							1·0000	0·1856	0·2771	X_8
								1·0000	0·8216	X_9
									1·0000	Y

in the final Regression model will take care of the above obvious intra-class correlation coefficient.

Table 4. This table summarise the results of step-wise regression analysis for different regression functions using the linear multiple models, the coefficient of determination (R_2) have been given. The following results emerge from this table.

Table 4

REGRESSION ANALYSIS

S. No.	Regression Function	Regression Equation	Co-efficient of determination (R2)	S.E. of residual
		F=573·79		
1.	$Y=f_n(X4)$	0·5564+0·8911X4* (t=1·72) (t=23·95)	0·9582	
		F=368·43		
2.	$Y=f_n(X4, X9)$	0·4872+0·7787×4* (1·13) (14·94) +0·0086×9* (2·79)	0·9684	
		F=272·26		
3.	$Y=f_n(X4, X9, X3)$	0·0252+0·0548X3* (0·03) (1·87) +0·6036X4* (5·51) +0·0108X9* (3·41)	0·9726	
		F=237·67*		
4.	$Y=f_n(X4, X9, X3, X6)$	0·8024+0·0815X3* (0·7100) (3·72) +0·6036X4* (5·98) —0·0597X6+0.0089X9 (2·16) (2·87)	0·9774	
		F=248·64		
5.	$Y=f_n(X4, X9, X3, X6, X8)$	2·0978+0·07404X33 (2·0) (2·80) +0·658X4* (7·26) +0·0902X6*—0·00005×8—0·0068×9 (3·38) (2·75) (2·42)	0·9833	DW-test= 1·974 Chi sq.=3·3982
		F=9857		
6.	$Y=f_n(X1, X2, X3, X4, X5, X6, X7, X8, X9)$	—1·4068—0.0079X_1+0.0040×2, +0·0666X3*+0·7151X4*+0·0052X5* —0·0730X6*—0·0182X7*—0·0001X8* ( ) +0·0069×9	0·9857	0·946
		F=114·8975		
7.	$Y=f_n(X1, X2, X3, X4, X5, X6, X7, X8, X9)$	—2·9790—0·0333X1+0·0058X2 (1·046) (·6763) (·9212) +0·8853X4*—0·0152X5—0·118X6 (10·684) (1·2110) (0·9762) —0·0092X7+0·0069X9 (0·1732) (1·953)	0·97692X8	

Value of 't' is significant at 5% level.

N.B. Figures in parenthesis indicate values of 't'.

(*i*) *When Y is a function of only one variables i.e.* X_4.

In this case, the value of R^2 is found to be 0·9582 which implies that only one single factor can explain a large variation. The variable X4 is actually a rough indicator of the educational levels of the parents who take decision to send their children for higher education. This is due to the fact that educated parents have got high espirations for sending their children for higher education. This is a fact in Indian Society where the children get their education mostly according to the wishes of their parents.

(*ii*) *When 'Y' is a function of two variables only viz. X4 and X9.*

In this case we find the value of R^2 further increases to 0·9684 which is quite high. The values of t & F are also highly significant even at 1% level which implies that both these variables i.e. percentage of population aged 35+ who are matriculates and above and the per capita budgeted expenditure on higher education are the two most important variables which determine the level of higher education in a state.

(*iii*) *When Y is a function of 3 variables viz. X4, X9, and X3.*

In this case the value of R^2 has further increased to 0·9726. The values of t & F are also highly significant even at 1% level., which implies that the level of higher education can be very well predicted using the following three variables.

(a) Percentage of population age 35+ who are matriculates and above.
(b) Per capita budgeted expenditure on higher education and
(c) Level of urbanisation in State.

(*IV*) *When Y is a function of 5 variables.*

In this case too, the value of R^2 further increase to 0·9774. The values of 't' and 'F' are found to be highly significant. It may be observed that the sign of X6 rective which implies that the level of higher education is expected to be high if the percentage of SC/ ST population in a State is low or the vice-versa. This is possibility due to the fact that the population in the relevant age group (17–22) yrs) of these communities are not fully utilizing the existing facilities of Higher Education inspite of the fact that a number of incentives for getting Higher Education have been provided for them by the Government since independence, one of the reasons for this may be due to the social rigidness, fulfilment of immediate basic needs, early marriage both among Males and Females etc. From this one may conclude that the education of SC/ST needs better attention at higher level also.

(*V*) *when Y is a function of 5 variables viz. X4, X9, X3, X6, X8.*

It may be seen that the value of R^2 is very high. The values of 't' and 'f' are highly significant even at 1% level. The regression coefficients of all the dependents variables are also significant. The values of regression coefficients for X8 is negative which implies that the level of higher education in State also depend upon the average number of higher education institutions for a given population i.e. physical facilities available for higher education in the State. Thus it may be seen that U.P., Punjab and Haryana have got much better facilities in higher education as compared to the other States and the level of higher education in these States is comparatively of a higher magnitude when compared to the other states.

(*vi*) *When Y is a function of 7 variables viz, X1, X2, X4, X5, X6, X7* and *X9.*

In this case the value of R^2=0·9769. The value of 't' for X_4 and F are highly significant at 1% level. This implies that by adding variables X2, X6 and X7 here the variation among different States is better explained using these 7 dependent variables.

Table 5
ANALYSIS OF VARIANCE

Source of Variation	*Degrees of Freedom*	*Sums of Squares*	*Mean Sqaures*	*F-Value*	*P (Exceeding F under HO)*
Regression	9	1051·70263	116·85885	130·52171*	·00000
Residual	17	18·22007	·89530		
TOTAL	26	1066·92270			

REGRESSION COEFFICIENT**

Variable Number	*Mean*	*Regression Coefficient*	*Lower Confidence Limit*	*Upper Confidence Limit*	*Standard Error*	*Adjusted Sums of Squares*	*Partial F-Test Value*	*'t' Values*	*P (Exceeding F under HO)*
1. (X_1)	38·2085	—·0079	—0·804	·0647	·0417	·0318	·0355	·1884	·8527
2. (X_2)	910·7037	·0040	—·0010	·0891	·0029	1·7280	1·9301	1·389	·1827
3. (X_3)	23·6800	·0666	·0143	·1190	·0301	·2883	4·9015	2·213	·0408*
4. (X_4)	5·3211	·7151	·5237	·2064	·1100	37·0338	4·2883	6·500	.0000
5. (X_5)	27·9652	·0052	—·0160	·0263	·0122	·1613	·1801	·4243	·6766
6. (X_6)	22·3222	—·0730	—·1373	—·0027	·0370	3·4915	3·4915	1·974	·0648
7. (X_7)	30·8648	—·0182	—·0954	·0580	·0444	·1513	·1690	·4110	.06861
8. (X_8)	10531·5556	—·0001	—·0001	—·0000	·0000	5·4994	6·1325	2·476	·0241*
9. (X_9)	77·1659	·0068	·0016	·0122	·0030	4·5378	5·0685	2·251	·0379*
10. (Inter-rept)	·2996	—1·4068	—6·1850	3·3714	2·7467	0·0000	0·0000	·71566	0·0000

98·573, Co-efficient of Determination (R^2)=98·573
00·946, *S.E. of the residual*=00·946
17·834, *S.E. as % of response mean*=17·834
Final Multiple Regression Equation,
$Y = 1·4068 - 0·0079\ X_1 + 0·0040X_2 + 0·0663X_3 + 0·7161\ X_4$
$+ 0·0052X_5 - 0·0730X_6 - 0·0182X_7 - 0·0001X_8 \pm 0·0069\ X_9$

*Significant at 5% level of significance.

(vii) When Y is a function of all the dependent variables X1, X2, X3, X4, X5, X6, X7, X8 and X9.

The value of R^2 in this case is found to be 0·9857 which indicates that more than 98·5% variation in determining the level of higher education is explained by this model. The regression coefficient as well as the level at which these are significant are given in Table 5. The regression coefficients for X1, X6, and X7 are very near to zero and are not significant at 5% level.

Validity of the Model

To test the validity of the model, we have found out the value of the variable :

$$Z = \frac{Y - Y}{s.d(Y)}$$

It is found that the value of Z lies between —1·96 and 1·96 in respect of all the States/Union Territories except Delhi. This proves the validity of the study as the number of observations lying outside —·196 and 1·96 being only one (less than 5%).

Conclusions and Further Research

The following important conclusion emerge from the above analysis:

(i) The level of higher education in a State is mostly dependent upon the percentage of educated population (matriculates and above) in the age-group 35+ which measures the educational level of the parents. It may also be concluded that educated parents have got higher aspiration towards their children to go for higher education.

(ii) The level of higher education also depends on the level of urbanization which implies that development of higher education will depend upon the future growth of urbanisation in the country to a large extent. This is particularly so in the Indian society as the number of students willing to migrate from rural to urban centres for higher education is not very high which may be due to the high cost of migration for the purpose of Higher Education.

(iii) One of the important factor which affects the level of higher education in a State is the physical facilities for higher education i.e. the number of colleges and other higher education institutions available for the given population. With the increase in the number of higher education institutions available in a State, the level of higher education is expected to increase.

(iv) Another important factor which influence the level of higher education in the State is the priority given to the higher education programme in the State as measured by the per capita budgeted expenditure on higher education.

Problems for further Research : The above mentioned analysis is limited to higher education sector alone, further research is needed to identify the socio-economic and political factors affecting the levels of primary education in different States of the country. This is particularly so as we have not yet been able to achieve the goal of universalisation of elementary education in our country. This study is also being undertaken by the authors of these papers.

References

1. *Report of the Education Commission* under the Chairmanship of Dr. D.S. Kothari, 1964-65 Ministry of Education and Social Welfare, Government of India.

2. *Report of the Working Group on Education and Culture* 1980–85 Plan, Planning Commission, New Delhi.
3. *National Policy of Education* 1968, Ministry of Education and Social Welfare, Government of India.
4. Development of Higher Education in India. A policy frame—*Bulletin of Higher Education* Vol. 4 No. 1, 2 and 3, February, University Grants Commission, New Delhi.
5. Implementation of the policy frame for Higher Education—*Bulletin of Higher Education* Vol, 4 No. 1, 2 and 3, Aug., 1979 University Grants Commission, New Delhi.
6. *Education in India* Vol. I, 1976–77—Ministry of Education and Culture, Government of India.
7. *Census of India* 1971, Part II-C, Social and Cultural Tables.
8. *Report of the Working Group on the Development of Scheduled Castes*—1980–85.
9. "Mathematical Models for the education Sector"—A survey—Organisation for Economic Cooperation and Development Paris, 1973.
10. "Education and Regional Development"—Technical Reports, Rapports techniques Vol. II-Organisation for Economic Co-operation and Development 1979.
11. Armitage, P; Smith, C; and Alpu, P. *Decision Models for Educational Planning*, Allen Lane, The Pengin Press, 1969.
12. Vaizey, J., *Models of Education;* New Society, Jan., 22, 1970.
13. SOM. *A simulation Model of the Educational System*, Technical Report of the Centre for Education, Research and Innovation ; OECD. 1970.
14. Jallade, J.P., *Educational Planning Methods*, OECD, Paris, 1970.
15. Isard, W., *Introduction to Regional Science*, 1975.
16. Arthur S. Goldberger, *Econometric Theory*, John Witey and Son, Inc, New York, 1976.
17. Makridakis, S., Wheelwright, Steven, C; *Intaractive Forecasting* Holden-Day, Inc, San Francisco, 1976.
18. Anderson, T.W. (1958), *An Introduction to Multivariate Statistical Analysis*, New York, John Witey and Sons.
19. Wilks, S.S. (1962), *Matheuratical Statistics*, New York, John witey and Sons, 1962.
20. Kadiyali, L.R., Viswanathan, E, Gupta, R.K., "Free Speed of vehicles on Indian Roads, *Journal of Indian Road Congress*, Xol. 42–3, December, 1981.
21. Kadiyali, L.R. Viswanathan, E, Gupta, R.K., Ummat, S.K., "Free Speed Studies on Rural Highways on Indian Road, *Journal of Indian Road Congress*, December, 1982.
22. Kadiyali, L.R., Viswanathan, E, Gupta, R.K., "Weighted Multiple linear Regression Analysis for Free Speed Analysis on Indian Roads, submitted for publication to IRC.
23. Gupta, R.K., Kadiyali, L.R., Viswanathan, E "Methodology adopted for development of Management Information System for Road User Cost Study in India", accepted for publication in Indian Roads Congress, 83.

S.C. Seddey and Ravi Kant Gupta

Journal of Higher Education
Vol. 9 No. 1 Monsoon 1983

Book Reviews

Higher Education in the Third World : Themes and Variations by Philip G. Altbach Pp. 28, *Maruzen Asia (P) Ltd., Singapore*, 1982, Price not stated.

No. 1

Philip G. Altbach is one of those few American scholars who in the course of their professional career have looked beyond the borders of their own country. Going by the book in hand he gives evidence of having first-hand knowledge about India, Singapore, Malaysia, Kuwait, Japan and quite a few other developing countries. It is important to call attention to this aspect of Altbach's work while reviewing this book.

When one comes to think of it, it is astonishing that so far very little attention has been given to Higher Education in the Third World. The Third World is not one unified concept. It includes countries in three continents—Asia, Africa and Latin America. In terms of numbers, their number would come to about a hundred. Whatever be the other variations, as noted by the author, they share the following three characteristics :

(1) The Third World academic systems serve a small proportion of the relevant age group. Whereas in countries like the U.S. more than one-third have access to higher education, in these countries the percentage of the relevant age group which goes to college is hardly 1% or 2%.

(2) Largely because of historical reasons, each one of these countries is linked with one of the major academic systems in the developed world. The three countries which exercise the largest measure of influence in this regard are Britain, the United States and France. Consequently, the advanced countries being the intellectual 'centre' and the other hundred countries being on the 'periphery' is a concept which is very much applicable to their respective situations.

(3) In most of these Third World countries, except perhaps Latin America, the key medium of instruction in higher education is by and large a European language which was popular in that particular country before the period of de-colonisation.

There three characteristics are so marked that they set these hundred odd countries apart from all others. These are countries in Europe for instance which are not substantial in size and yet at the same time they

cannot be described as peripheral to the 'centre'. Belgium is one example. Another example can be Czekoslovakia.

CENTRE AND PERIPHERY

The key concept in this entire discussion is the concept of the Centre and the Periphery. A separate chapter is devoted to this theme wherein it is brought out clearly that knowledge is produced mostly in these advanced countries and then exported to the Third World through books and journals. Quite logically, one of the sub-themes of the book is the Distribution of knowledge wherein the whole gamut of issues dealing with scholarly publishing in the Third World as well as the channels of communication are considered in depth. This is the strongest part of book and deserves to be read with care.

What is stated is not all that new or earth-shaking but the very tact that it is stated in some detail and forms of core of the argument by a scholar who is based in one of the American universities is significant by itself. Most scholars in the developed world are so self-centred that as far as they are concerned the rest of the world exists mainly for their sake. In their world view the centre of the stage is occupied by their country or by a few other developed countries. Altbach's book provides a refreshing contrast to this approach and is to be welcomed from that point of view also.

An important question to ask here is why no one in the Third World has yet taken initiative to even convene a seminar to discuss these problems. The answer, sad to say, is the very issue about which the book is written. In each of the Third World countries, the university is one of the peripheral activities and seldom at the centre of things. Altabach has dwelt on it with great insight and eloquence but there is one dimension missing from his analysis.

WHY PERIPHERAL

–How is it that despite more than a century in countries like India the university still continues to be on the periphery? One important reason for it is the fact that in developed countries literacy has been a universal phenomenon for almost a century. In most of these countries everyone goes to school till the age of 15–16. It is only after that that one reaches the stage of higher education. Not only that, in addition to the school system which covers the entire population, there is the whole infrastructure of bookshops, public libraries, magazines, journals, the daily press and now of late the ever present media.

Each one of them is an educative force and each one of them moulds the thinking of children as they get shaped into citizens. For some years now the media has been blamed for playing not exactly a constructive role. That controversy apart, the fact remains that there is hardly any gap between the town and the country and whatever be the differences of class the educational system covers each and every child. It might have been helpful if the author had also probed this aspect of the problem in some depth.

The fact however remains that Altbach has uncovered a new set of problems which require intensive and detailed discussion. He also has a separate section dealing with Teachers and Students and the crucial role of the professioniate. In particular, he dwells upon the attitude of servitude which most professors in the Third World display. In their professional outlook as well as conduct they underline the point that they belong to a university system which is on the 'periphery' and not at the 'centre' of things. This is what calls for some heart-searching on the part of those who not only are victims of the system but also choose to perpetuate the psychology of being victims.

Amrik Singh

No. 2

Those who are familiar with Philip Altbach's work on publishing in India, student unrest, and textbook aid will find this collection of papers somewhat disappointing. For one thing, a collection of independently written papers rarely makes a book, and this collection does not illustrate that rare possibility. Countless ideas, examples, and sometimes parts of sentences have been

repeated many times over throughout the book. Repeated overlapping destroys the classification of themes under which the papers have been arranged. Such problems of presentation, although not easy to dismiss, need not detract from one's appreciation of Altbach's point of view. The one good thing this collection does is to offer an opportunity for getting an overview of a prolific writer's recent work.

The central theme of Altbach's interest in higher education in the Third World is the continuation of colonial legacies. No Third World country, he says, has made a clear departure from the model of university education which evolved during the days of colonial rule. It is easy to notice the persistence of colonial traditions in institutional administration, structure and content of the curriculum, medium of instruction, student-teacher relations, and the examination system. Budgets of higher education have been growing, and new institutions have constantly been set up, but the basic structure of academic institutions has remained untouched. Altbach hopes that the advanced developing countries, such as the oil rich countries of the Middle East, Republic of Korea and Taiwan, will be able to evolve a non-colonial model of university education. But are these not the countries worst affected by neo-colonial patterns of control? Altbach believes that their relative economic prosperity has given them a good chance to start building structures of higher education in an original and planned manner.

Throughout the Third World today, Altbach ackowledges, higher education has an 'elite' character. The curricula and institutional norms reflect the elite character of the clientele of colleges and universities which come largely from the upper levels of society. The pace of growth many Third World countries have attained in the matter of starting new institutions might give one the impression that higher education is now available to a larger section of society. Altbach reminds us that in all African, Asian, and Latin American countries less than 5 per cent of the relevant age group of the population is attending post-secondary institutions. In India, less than 2 per cent of the relevant age group of the population is in post-secondary institutions. The Indian experience has been that increase in funds for higher education is made at the cost of primary education. The imbalance between resources allocated for school and for higher education is greater in the poor than the rich countries, and greatest in the least educationally developed areas of the poor countries. Bihar and Uttar Pradesh are telling examples of this phenomenon in India. The contradiction is obvious: spending of more money on higher education, apparently to expand it, will make it more elite, for the extra money will undercut the much-needed growth of primary education. Only a change in political choices can resolve this contradiction, and such a change cannot be purchased with oil money or foreign investment.

While the colonial model of the university persists, structures of neo-colonial relationship between the rich and the poor countries have emerged. Altbach discusses some of these structures under the theme of 'distribution of knowledge'. "The basic reality", he says, "is that virtually all Third World universities are at the periphery of an international knowledge system which is dominated by the major industrialized nations." Academic publishing and research offer ample evidence of the truth of Altbach's thesis. In the matter of knowledge requirements, the dependence of Third World countries on First World sources exends to knowledge about themselves and other Third World countries. A large number of academic writers of the Third World continue to prefer publishing their research in Western journals. In this context, Altbach's own choices do not offer a healthy exception. None of the papers included in this volume first appeared in a Third World journal. His footnotes rarely refer to writings and research done by Third World scholars and published in Third World journals or magazines. Certainly one cannot discredit Altbach for not practising his own precept; his conformity to the pattern he criticises merely shows how powerful the pattern is—so powerful that even those who know it well fail to depart from it.

The main attraction of Altbach's criticism of colonial traditions and policies is its friendliness. He uses radical terms such as 'centre' and 'periphery' to identify colo-

nial relationships, but he does not probe colonial and neo-colonial structures with the help of this terminology to the disturbing depths of economic and cultural oppression. It seems that in Altbach's usage the terms 'centre' and 'periphery' have little more than geographical value. He certainly does not allow us to see a conflict of interests between those who rule from the centre and those who comply in the peripheries. Altbach's commentary on neo-colonial structures of domination stops being interesting when he starts to take motives into account. For instance, he dismisses the detrimental effect of American textbook aid on indigenous publishing in Third World countries by calling such effect 'unintended'. It would be nice to use this method of dismissal on the more dire effects on Third World's humanity of America's aid in areas such as war equipment and medical research.

Krishna Kumar

Technological and Social Complexity. By Maurice N. Richter, Jr. State University of New York Press, Albany, 1982. pp. X+ 120. Price : $ 10·95 paper, $ 34·50 Cloth.

The book under review is concerned with contemporary problems of social and material technology, though the author has successfully brought in history and anthropology to strengthen and elucidate his arguments. I found the book very interesting not for the overall theme or argument of the book, but for the definitional clarity that the author continuously engages in right through his work. In addition to the attention the author pays towards defining terms like technology—both organizational and material, rituals, science, and stages of social development, he also examines in detail the veracity of some statements which are accepted almost uncritically and axiomatically. For instance he takes up for serious questioning the accepted notion that modern warfare is far more destructive of human life, or the belief that the cost of medicine is far greater now than it has ever been. On both these counts he points out the unexamined areas which had so far been quite calmly ignored. He also questions another anthropological truism which states that the primitive man is more concerned with nature than the modern man, and that he is far more committed towards the preservation of nature than his modern counterpart is. On all these points I found his work to be very profitable and provocative.

His comments on the impact of technology in pre modern societies does not however have the same degree of persuasiveness, and like the major part of his book, it is made up of a series of points, not fully co-ordinated, nor in any sense novel or inspiring. His observations on China's technological style are also quite flat and impressionistic and do not posses the sharpness or the acquity he displays while refining definitions or burying old truths. The most significant comment he makes on China is that with Mao Zedong's cultural revolution, technology as such was not being given up, only that material technology was being substituted by organizational technology. One only wishes he had used his definitions on the varieties of technology to study the complexities between these two forms of technology in a society whose basis is a self-conscious social technology.

As has been mentioned earlier there is no single theme, or a group of related themes, that lend coherence to this work. It is made up of observations, which by themselves are not without interest, but they make no impact beyond the sentences to which they are limited. He has raised issues like the variegated responses to scientific inventions and their technological follow throughs in different societies in history, without further enlightening us on the subject. He talks of the great developments in science in the ancient world and of their long periods of stagnation after which the modern western world took over, again without helping us, however minutely, towards understanding this great historical puzzle. I have one last complaint to make of this book in this short review. Richter has not examined the specificities of medical science and technology where demonstrable "means-ends" rationality does not generally hold, and yet medical technology is not quite like magic. I think the author should have paid more attention to the peculiar characteristics of medicine, and to the fact that the

stated ends in medicine are unlike other material technologies in so much as medicine does not primarily aim to alter the *status quo* but to bring the system to *status quo ante*.

Finally, I must repeat that for the definitional clarities alone this book is more than worthwhile. I have almost immediately benefitted from many of them. One hopes that in future the author will be able to bring his precision over terms to greater use in this field of science, society and technology.

Dipankar Gupta

Culture, Politics and Critical Academics by Asoke Basu. Archana Publications, Pp. 106. Rs. 50.

If somebody says that 'civilization has inexorably linked higher education and "academe" as a major source of institutional authority' as Professor Asoke Basu has done in the opening sentence of his book, *Culture, Politics and Critical Academics*, one will choose to start one's analysis at a superficial or a mystifying phenomenal level in the first place and would wrongly consider the system that legitimizes the institutional authority as the source of such authority. Anyone desirous of concrete and specific analysis at a deeper level underlying the former must start with the production and reproduction of human life, its survival and enrichment. Because, if men are to live, they must have food, shelter and clothing, which again, must be produced by men collectively by entering into relations with one another. But they cannot produce without acquiring certain skills and knowledge in respect of nature as well as in respect of the social world developed out of the social relations of men. It is with the development of social division of labour, functional differentiation and the increasing complexity of such knowledge that the "academe" came into existence to cater higher education. These academics having evolved one of the development of social division of labour required by the mode of production, had been helping the reproduction of the conditions of production not only by disseminating the knowledge of the material and social world but also by inculcating certain values that legitimize the institutional authority required by the mode of production.[1]

So the "academe" is not the source of institutional authority, or the State or legal system, it only plays as the second fiddle by legitimizing the latter. Despite the partial or relative autonomy enjoyed by the academy of higher education, it cannot be ignored that it has orginated to meet some need of the social system based on the mode of production. And it was more or less in the past and is, at present, dependent on the patronizing institutional authority for its financial and legal support. But his (author's) own citation from Kamen (p. 2) asserting that the principal aim of the colleges in 1636 was more political than spiritual because most of the colleges (under church) were training for the royal services also subscribes to the above view. Although the author, in the opinion of Asok Mitra, who wrote the Foreword of the book, 'speaks almost wholly through the mouths of other author's (p. ix) he has to make such observation as 'the educators in the universities were called upon to train students in the maintenance and continuance of public structures.' (p. 3) If this is so, then this observation appears to go against the contention of the opening sentence noted above.

Again, adversary culture of all sorts—that is, that which supports feudal structure and values against the post-feudal ones and that which supports capitalist structure and values against the socialist ones cannot be put together and equated (pp. 3–6) because 'the Radical of today is the Conservative of tomorrow' as has been rightly observed by the foreword-writer (p. xi). These are, however, the main issues that comprise the first chapter of the book.

In the opinion of the author, this 'critical role of the politics of academics' (p. 10) may be either of two types, either integrative or oppositionist depending on the occurrence of the fusion between intellectuals and the functionaries of bureaucracy (p. 11). This view is difficult to

1. Louis Althusser, *Lenin and Philosophy and OtherEssays*, Monthly Review Press, New York, 1971 pp. 131–3, 143, 145, 152, 155–71.

accept because such roles depend on various factors such as socio-economic origin, class-position, class-identification and class-centric function. Again, the 'academics who are integrative' would 'tend to mirror the nation's political orientation'. (p. 11) is not understandable. They can, at least, reflect the political orientation of the dominant class in the specific society. Further, in the opinion of the author, 'three actors in the development of a nation state may be noted—intellectual, bureaucracy and public.' (p. 11) Amazingly enough, this appears to be the picture of a classless society with two dominant strata. As the author appears to be concerned with the analysis of western capitalist societies, he should not have omitted the existence of classes with unequal power-potential—the dominant role of the financially powerful corporate sector. The non-realist and non-Marxist orientation of the author might have prompted him to make as much simplification of the situation as the western scholars, who are reluctant to expose the exploitative aspect of such societies, do.

In the third chapter, having such heading as 'Politics of Academics—The Divided Liberals,' the author has found both the academia and the political authority mutually dependent upon each other and agrees with S.N. Eisenstadt in contending that both (that is, academic and political authority) attempt to maintain maximum autonomy and maximum control over the other. Thus 'this relationship produces a dialectical tension within the institution of academia' (p. 13). This dialectical tension, having been more acute because of the increasing dependence of the political authority on the academics or intellectuals for their services as advisers or experts on the one hand (p. 15) and the increasing dependence of the universities on the political authority for huge financial assistance for research and other activities (pp. 15–16) on the other, has, in the opinion of the author, made the academics more concerned about the applicability of liberalism in the universities and its decline and divided them (that is, the academics) on the meaning of liberalism (p. 16).

But the author has neither noticed nor traced the predominance of capitalist state within the framework of such mutual dependence between academics and the political authority. How this predominance of the capitalist state, its role and penetration in the sphere of higher education operate may be seen from a rather longish quotation given below :

'The changes on which attention has been focused represent only a new and more direct form of capitalist relationship within the universities. The "traditional" structures of academic systems, which have been modified but not wholly superseded even in the United States, and are till only marginally altered elsewhere, represent forms of relationship which themselves reflect the insertion of the university in the capitalist system. And the social science, in which research remains subservient to the career structure of teaching—to a greater extent than in the natural sciences, are dominated by these forms of relationship.

'Education has not been, generally, a sphere in which surplus value is produced but one in which realized surplus value is consumed, generally under the aegis of the state. There are, of course, spheres of private education, including higher education, but historically these have tended to become of secondary importance in relation to state systems. The development of higher education does not, therefore, depend directly on the operation of the law of value, but on mediations of that law through the political processes of the state and of the higher educational institution itself. Though these means higher education is brought into relation with the capitalist economy.

'It is, however, true that within such general structures the "academic" process, as such, has typically an important degree of autonomy'.

'Unlike work which is produced under the direct aegis of a government agency or capitalist concern, it can claim a special degree of autonomy. It is subordinate only to a form of organization which claims to exist for the purposes of developing knowledge as such. But in fact that organization is a part of the organization of the capitalist university; its form of knowledge reproduces the reification produced by the capitalist

mode of production; its standards limit the scope and content of intellectual work in the interests of a hierarchical structure of authority and income.'[2]

Without examining the autonomy of the quest for knowledge that Robert Nisbet sees as the core of 'academic dogma'[3] the author has merrily juxtaposed opinions of various writers regarding the concept of liberty, equality, freedom and the rule of law to differentiate their real meaning from the misinterpretations against the backdrop of academic-state relationship in the last part of this chapter. As if the removal of misinterpretations of these ideas relating to liberalism or the reversal of the decline of liberalism itself may help the resortation or preservation of academic autonomy. But Martin Shaw (Ref: op. cit. chapters II and III) in simple, direct and forceful language has demonstrated how different theories of social sciences have developed to meet the requirement of capitalist industries; how state intervention in socio-economic fields to save capitalism has made the industries and different foundations finance researches in social work, sociology, planning and economic development specially in U.K.; how federal research and development expenditure in the U.S.A. delimited such areas in 1965 for research as space-technology, military science, medical science, nuclear physics, education, vocational rehabilitation and welfare administration and even the social basis of research-techniques. David Smith, in similar style of direct and non-terminological expression, pin-pointed the capitalists' representation in the management of overwhelming the American universities.[4]

In chapter IV on 'Politics of Academics—Social Basis,' the author has found the 'overall outlook of academics' to be 'left of the centre'. But, as the forword-writer has rightly observed, 'it may be meaningless to speak in terms of center, left or right of center or radical and conservative, for these words will mean different things to different disciplines at different time-place situations.' (p. xi) How much leftist the left has been assumed to be may be ascertained from the observation that anti-Vietnam-war radicals did not have the goal of overthrowing capitalism in mind and, as such, when the draft ended before the war the anti-war movement died out. (p. 73) In the opinion of the author 'those with low socio-economic status are more likely to conform to the system's requirements and not question the legitimacy of the system'. (pp 73–74). If this is a fact and if '*faculty whose father has been employed in manual occupational rank tend to be left-of-the center*' (p. 43) [Italics in the original] then what leftism actually mean is anybody's guess.

In the last chapter, probably for its being a chapter on Conclusion, our author has made some concluding remarks some of which may be found to contradict each other. Academics are expected to be 'increasingly become closely tied to secular power' (p. 66) and carry on their function as servants of the established regime basing their authority on their ability to aid those who control the state. But how one can expect this if one finds the academics to be anti-establishmentarian seems to be a most question.

Secondly, the anti-establishment attitude against a left national establishment and the anti-establishment attitude against a conservative national establishment cannot be equated as has appeared to have been done (pp. 66-7).

Thirdly, what freedom of inquiry do the academics preserve when they accept financial assistance granted by the capitalist state or the capitalists themselves for carrying out research in such fields as are specified by the granting authorities has not been made clear enough. Again, how much independence do the academics maintain when they provide the core values of the society having become 'the agent of the order' (p. 68) is again a matter of enquiry. Actually such apparent independence might have been provided by the dominant but dormant structure (mode of production) of social formation in its own

2. Martin Shaw, *Marxism and Social Science*, Pluto Press, 1977, pp. 48, 49 and 54.

3. *The Degradation of the Academic Dogma : The University of America*, 1945–1970, London, 1971.

4. David N. Smith, *Who Rules The Universities?*, Monthly Review Press, New York, 1974.

interest as has been explicated by Louis Althusser following Marx's analysis in *Grundrisse*. The myth of academic autonomy, in fact, has been created to elude people by making them believe in such autonomy and remain satisfied on the one hand and to help the reproduction of the mode of production with certain values associated with it on the other.

Fourthly, while the author has approvingly cited the observation of Everett Ladd Jr. where the latter considers the intelligentsia "the pro-government class of contemporary America. Large segments of the college educated, professional stratum—people in research and development, in education, in public bureaucracies, and the like—are directly dependent upon government for their income and for the support of their professions and institutions" and himself observed 'that welfare state liberals have become etatist and selectively polemical' and 'academics who propose egalitarian solutions find remedy with the state' (p. 78), has opined, thereafter, that the 'intellectual freedom is on the rise.' (p. 79) But his last noted opinion does not follow as conclusion from the citation and observations the author has made on the previous page unless he is prepared to define freedom as subservience.

In the concluding part of this chapter the author has observed that 'with the rapid growth of knowledge..their neighbouring communities—business, government, religion, media, and others—need academics more so than before...' (p. 79); that 'with the demand for policy formulations, these critical academics will form the fulcrum of this plurality—authority and order.' That this 'routinization of intellect's power...will be matched...by the academy's willingness to integrate the institutional source of authority (Academy) and the structure of order (State)'; and that such 'an integration is neither an apocalyptic vision of change nor the "surrender of values" (p. 80). But even if these values are not surrendered what purpose does these actually serve if these values are the values concerning the myth of academic autonomy ?

Despite the above observations it should, however, be admitted that the author has placed a problematic before the Indian scholars which has not been throughly dealt with so far. He has also surveyed the existing literature almost in its entirety—'almost' because he has omitted most of the marxist authors on this subject. If the marxist writers of our country take up the issues raised by the author and place their respective analysis the same will facilitate proper understanding of the issues involved.

Buddhadeva Bhattacharyya

BOOKS AND JOURNALS RECEIVED

India International Centre, Quarterly, Volume 10, Number 3, 1983, India International Centre, New Delhi.

International Journal of Dravidian Linguistics, Volume XII, Number 4, Winter 1981, Dravidian Linguistics Association, Kerala Paaini Building, Trivandrum.

Minerva, A Review of Science, Learning and Policy, Volume XIX, Number 4, Winter 1981, by the International Council on the Future of the University, New York City.

One Teacher One School, Biblia Impex Pvt. Ltd., New Delhi.

Research Abstracts Quarterly, January-March, 1979, Indian Council of Social Science Research, New Delhi.

Society and Change, October–December, 1982, Volume III No. 1, Quarterly Journal of the Association for Studies in Society and Social Change, Calcutta.

The Journal of Karnatak University : Social Sciences, Volume XVIII, 1982, Karnatak University, Pavate Nagar, Dharwad.

The Indian Journal of Social Work, Volume XLIV Number 2, July, 1983, Tata Institute of Social Sciences, Deonar, Bombay.

The Journal of Karnatak University : Humanities, Volume XXVI, 1982, Karnatak University, Pavate Nagar, Dharwad.

The Beautiful Tree by Dharampal, 1983, Biblia Impex Pvt. Ltd., New Delhi.

Our Contributors

Asa Briggs is an eminent British social historian who has served as member of the University Grants Committee and as Pro-Vice-Chancellor of the pioneering University of Sussex. He is currently Provost Worcester College Oxford and Chancellor of the Open University.

Amita Verma is currently Professor and Head of the Department of Child Development and Family Relationships and Dean of the Faculty of Home Science, M.S. University, Baroda. Her areas of specialisation are Early Childhood Education, Pre-school Teacher Education and Family Life Education. She is Member of ERIC, NCERT and the Elementary Teacher Education Committee of the NCTE. Holds membership of National and International professional organisations in Early Childhood Education, Home Economics and Teacher Training. She is author of a book titled *In favour of Children : An Agenda for Action* and numerous papers in reputed professional journals.

Amrik Singh was Secretary, Association of Indian Universities and has been Vice-Chancellor of Punjabi University, Patiala.

B.B. Chatterjee was from the Department of Psychology, Utkal University, Bhubaneswar. At present he is the Professor of Psychology at the North-Eastern Hill University, Mizoram.

Buddhadeva Bhattacharyya is Reader in the Department of Political Science, University of Calcutta, Calcutta. He is member of Calcutta University Council and Editor of *Society and Change.*

Christopher Orpen is from School of Management, Deakin University, Victoria, Australia.

Dipankar Gupta is working as an Assistant Professor at the Centre of Social Medicine and Community Health, Jawaharlal Nehru University, Delhi.

Dietrich Goldschmidt is Director em. at the Max Planck Institute for Human Development and Education, Berlin West, and Professor of Sociology at the Freie Universitat, Berlin West. His work is mainly in the field of research on higher education, comparative education and education in the Third World.

Dinesh Mohan holds the State Bank Chair for Biomedical and Rehabilitation Engineering at IIT, Delhi. His professional research includes bio-mechanics of trauma, accident research and rehabilitation of the handicapped. He has also published articles on science and technology policy in India.

G.W. Rama is an Argneine educationist who has served on the staff of the International Institute of Educational Planning at Paris in charge of major study of education and development in Latin America. He is currently Director, Education Economic and Social Commission for latin America, Santiago (Chile).

J.K. Pillai is Professor and Head of the Department of Education, Madurai Kamraj University. She is currently working in the area of higher education guiding researches and conducting studies in instruction and evaluation at the collegiate level.

Krishna Kumar teaches at the Department of Education, Delhi University. He is the author of *Raj Samaj aur Shiksha* (Macmillan, 1978), and is currently working on a book on the political context of education in India.

M.V. Soundara Rajan is Reader in Commerce at Osmania University, Hyderabad. He was Chief Warden of Osmania University, member of UGC Experts Committee on Hostels. Also assisted the Government in solving hostel problems.

P.J. Gabriel is Professor of Botany, American College (an autonomous Institution) Madurai. He has few papers and publications to his credit. He is now in Nigeria working in the area of Biology Education.

M.A. Khader is from Zakir Hussain Centre for Educational Studies, S.S.S., Jawaharlal Nehru University, New Delhi.

R.C. Srivastava is on the faculty of the Department of Education (C.I.E.), University of Delhi. He is the author of six research oriented books and forty research papers and articles. Educational Administration and Teacher Education are his areas of work and study.

R.K. Samanta is at present Faculty Member, National Academy of Agricultural Research Management, Hyderabad. Has served B.C. Agricultural University, West Bengal and ICAR Research Complex, Shillong before. Teaches Communication and Transfer of Technology. Has published 36 research papers, 1 book and 7 bulletins and reports.

R.K. Gupta is working as Scientist at the Indian Institute of Petroleum, New Delhi. He has 13 years of wide experience in various research institutions including on various International sponsored projects. His current areas of interest includes applications of systems Dynamics, Simulation modelling and computer software development.

S.C. Seddey is presently working as Dy. Director-(Statistics) in the Ministry of Education and Culture, has experience in the field of educational planning, statistics and regional planning, associated with a number of committees/working groups etc. relating to improvement of educational statistics system in India.

Sunil Misra is presently Director, Audience Research in All India Radio. He was the Executive Secretary of the international symposium on 'Problems of development of the underprivileged communities in the third world' (SUNCOM '82) held at Vigyan Bhawan in October 82.

S. Singhal is on regular Faculty of Zakir Hussain Centre for Educational Studies, School of Social Sciences, Jawaharlal Nehru University, New Delhi and currently on leave is Professor at Shri Ram Centre for Industrial Relations and Human Resources, New Delhi.

T.S. Saraswathi is working as an Associate Professor in Child Development at Baroda and is currently at Cornell University as a Fulbright Visiting Professor. Her current research interests : Child Development from an ecological perspective socialization.

MINISTRY OF EDUCATION AND CULTURE
Journals and Publications on Sale

JOURNALS	ANNUAL SUBSCRIPTION Rs. p.
The Education Quarterly	24·00
Shiksha Vivechan (Hindi version of the Education Quarterly)	24·00
Sanskriti	4·00

IMPORTANT PUBLICATIONS

General Information for Indian Students going abroad	3·80
Our Cultural Fabric: (Series)	
(a) Indian Poetesses Past & Present Part I	3·90
(b) Indian Poetesses Past & Present Part II	4·25
(c) Festivals of India	6·25
(d) Cultural Heritage of Laddakh	10·50
(e) Popular Sports & Pastimes of India	12·20
(f) India and South East Asia	8·40
(g) Buddhism in India and Abroad	31·00
(h) Folk Entertainment in India	16·00
(i) Puppet Theatre in India	7·25
Education, Individual and Society—Selected Addresses of Smt. Indira Gandhi	10·15
Report of the Secondary Education Commission	3·00
Report of the Education Commission (English)	60·50
Directory of Institutions of Higher Education 1977-1978	73·50
List of Technical & Professional Qualifications Recognised by the Government of India–1978	6·50
The Report of the University Education Commission Volume–1 (Dr. Radha Krishnan Report)	82·00

UNESCO PUBLICATIONS	JOURNALS
(1) Unesco Courier	(2) Culture
(3) Impact of Science on Society	(4) Museum
(5) Nature and Resources	(6) Prospects

Unesco publications on Education, Science, Social Science, Culture, Communication, Statistics, Documentation, Libraries and Archives are also on sale with us.

Also Available DISTRICT GAZETTEERS of :

Andhra Pradesh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal.

Subscriptions are also accepted for the UGC Journal. "JOURNAL OF HIGHER EDUCATION"

Catalogue will be supplied on request.

Address all enquiries to:

The Assistant Educational Adviser (Pub), Ministry of Education and Culture, Ex-A.F.O. Hutments, Dr. Rajendra Prasad Road, New Delhi--110001.

STATISTICS AND INFORMATION

University Development in India*

The University Grants Commission publishes every year a statistical review of the Development of University and Collegiate Education in India.

The following reviews have been published so far.

1. *University Development in India,* 1961-62. 1962 pp.76
2. *University Development in India,* 1962-63. 1963; pp.69
3. *University Development in India,* 1963-64. 1964; pp.106
4. *University Development in India,* 1964-65. 1966; pp.178
5. *University Development in India,* 1965-66. 1968; pp.266
6. *University Development in India,* 1966-67. 1969; pp.288
7. *University Development in India,* 1967-68. 1971; pp.324
8. *University Development in India,* 1968-69. 1972; pp.467
9. *University Development in India,* 1969-70. 1973; pp.488
10. *University Development in India,* 1970-71. 1974; pp.524
11. *University Development in India,* 1971-72. 1976; pp.572
12. *University Development in India,* 1972-73 to 1976-77. *Part I Section A: Universities, Colleges and Enrolment,* 1979; pp.1-579.
13. *University Development in India,* 1972-73 *to* 1976-77. *Part I Section B: University Departments, University Colleges and Affiliated Colleges,* 1980; pp. 580-948.
14. *University Development in India,* 1972-73 *to* 1976-77. *Part I Section C: Postgraduate and Research Enrolment,* 1981; pp.949-1280.
15. *University Development in India,* 1972-73 *to* 1976-77. *Part II Section A: Examination Results* 1973 *Annual*+1972 *Supplementary;* 1974 *Annual*+ 1973 *Supplementary* 1980; pp. 1-394+xi.
16. *University Development in India,* 1972-73 to 1976-77. *Part II Section B: Examination Results* 1975 *Annual*+1974 *Supplementary* 1981; pp.394-785.
17. *University Development in India,* 1972-73 *to* 1976-77. *Part II Section C: Examination Results* 1976 *Annual* + 1975 *Supplementary* 1981; pp. 786-1119.
18. *University Development in India,* 1972-73 *to* 1976-77; *Part I Section D : Postgraduate and Research Enrolment* 1982; pp. 1290-1669 + vi.

*Available from Publication Officer, University Grants Commission, 35, Ferozeshah Road, New Delhi-110 001.

IN FORTHCOMING ISSUES

"BIG SCIENCE" AND THE UNIVERSITIES; SOCIAL WORK CURRICULUM, MIDGET BUREAUCRATIC PHENOMENON; REFELECTIONS ON SYSTEM TRANSFORMATION; EVALUATION OF OPEN UNIVERSITY (U.K.); DISTANCE EDUCATION; JOURNALISM IN HIGHER EDUCATION. BOOK REVIEWS ETC.

